

## 5088/6088/7088 SERIES COMBINE PRODUCTIVITY GUIDE



### FEATURING

- Enhanced Productivity Features
- Safety
- Controls and Operations
- Service Inspections
- Controls and Instruments
- Maintenance
- Combine Adjustments
- Advanced Farming Systems (AFS)
- Storage



# GENERAL INFORMATION

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With over 30 years of rotary combine industry leadership, Case IH continues to provide superior combine performance and excellence. Case IH has developed the most efficient, reliable and productive harvesting machines throughout the world - combines with which all other combines are compared and none are equal.

Now, in 2009, Case IH introduces the new 88 Series Axial-Flow® Combines. While bringing new innovation to the Axial-Flow lineup, Case IH adheres to the core principals that were established for the Axial-Flow combines 32 years ago, and have been the benchmarks in all subsequent combine design.

- Simplicity
- Grain Quality
- Grain Savings
- Crop Adaptability
- Matched Capacity
- Resale Value



# GENERAL INFORMATION

Our goal is to ensure that we meet or exceed our customer's expectations and deliver unmatched productivity, reliability and performance. We will not abandon these principles, just as Case IH has never abandoned our commitment to keeping our customers number one.

The AFX rotor delivers the most crop and harvesting flexibility of any threshing/separating system. Gentle grain-on-grain threshing, and the flexibility of multiple rotor, concave and separator grate configurations makes the Axial-Flow at home in the corn and beans of the Midwest, sunflowers, cereal and oil grains, rice and hard-threshing grass seed.

The new 88 Series combines use the refined "re-timed" rotor, with enhanced throughput in green, tough operating conditions.

As the years have gone by, innovations like the AFX rotor, Cross-Flow cleaning fan, AFS precision farming technology, "smart" controls for headers, operator environment, engines, and a host of other systems have been instrumental in Axial-Flow leadership. When Case IH has recognized the opportunity to improve, we have taken up the challenge, and continued to give our customers more with each new model.

Our 5088 and 6088 are direct replacements for the 2577 and 2588 in Class 5 and Class 6 respectively. The new 7088 now offers Case IH customers two choices in Class 7 power and productivity. This new family of Axial-Flow combines brings more power and capacity to the field than their predecessors,

with 290, 330 and 375 maximum horsepower engines, and the muscle to work grain heads up to 36 feet, draper headers to 40 feet, and 12 row corn heads in the best yielding crops and toughest conditions. High yields will not bog down your combine productivity with 250 (5088) or 300 (6088/7088) bushel grain tanks with 2.5 and 3.0 bushel per second unloading rates.

In addition to more power and capacity, we will introduce you to numerous productivity-enhancing features of the new 88 Series. This all adds up to greater value for your combine dollar, and more profit for your farming operation.



# ENHANCED PRODUCTIVITY FEATURES

## Feeder

The 88 Series feeder faceplate is increased in size to allow header compatibility with larger 7010, 8010 and new 20 Series Axial-Flow combines.

- The feeder width is 45.5 inches, with three-strand/two-slat serrated feeder chain to ensure positive crop feeding (see figure 4.1)
- Feeder chain slat serrations are rolled, not stamped, for optimum material flow without sacrificing grain quality

A new spring-loaded feeder chain tensioning system maximizes feeder chain tension accuracy (see figure 4.2).

- Greater convenience, ease of adjustment for the operator
- 5088 uses two 2½ inch feeder lift cylinders and the 6088 and 7088 uses two 3-inch feeder lift cylinders
- 3-inch cylinders can be installed on 5088 for larger header applications, such as draper headers over 35 feet
- A third cylinder option is no longer required for larger headers



Figure 4.1



Figure 4.2

A simple, reliable and field proven belt drive system drives both the header and feeder.

88 Series has a new feeder reverser system (see figure 4.3).

- High performance, electro-hydraulic reverser with positive gear-to-gear engagement
- Only engages when reversing is required
- Lift feeder clutch switch and pull to rear to engage reverser

Optional two-speed header drive.

- Provides improved header-to-ground speed matching
- Select speed with in-cab shift lever

Same single-lever header latching system as used on the 7120/8120/9120 combines (see figure 4.4).

- Case IH hydraulic multi-coupler enables fast and easy header hydraulic hook-ups
- Single lever header latching system
- Single point electrical connector



Figure 4.3



Figure 4.4

# ENHANCED PRODUCTIVITY FEATURES

## Cleaning System

Expansive Axial-Flow 88 Series cleaning system assures maximum capacity in each class size (see figure 5.1).

- 5088 - 7,947 sq. in. (5.1 m<sup>2</sup>)
- 6088 - 7,947 sq. in. (5.1 m<sup>2</sup>)
- 7088 - 7,947 sq. in. (5.1 m<sup>2</sup>)

An optional in-cab sieve adjust feature is available all models

- Compatible with Automatic Crop Settings feature
- Also includes ground level adjustment switch bank
- New lower sieve viewing doors

## Clean Grain System and Grain Tank

Clean Grain elevator system has been redesigned in several key areas for increased elevator capacity:

- Clean grain cross auger diameter increased 1/2 inch
- Redesigned clean grain elevator inlet and inclined delivery auger
- Clean grain elevator capacity rated at 3,450 bu./hr. (a 15% increase over the 2588)
- New, longer unloading tube lengths (up to 24 feet) with added component material thickness provide greater reach for larger headers
- Ground level chain adjustment
- All 88 Series have quick-foldable (no tools required!) grain tank extensions for roading, transporting and storage
- New single lever bubble up auger folding design
- Optional electric folding grain tank and delivery auger, controlled by in-cab switch in cab headliner. Closes completely to keep grain tank clean (see figure 5.2).

## Residue Management

Full surround spreader curtain provides improved spreading performance (see figure 5.3).

- Channels material into the larger diameter spreaders
- Curved bats for improve material spread
- Windrow formation board incorporated into the rear spreader
- Easy, no-tools needed 2-speed spreader belt drive system



Figure 5.1



Figure 5.2



Figure 5.3

# ENHANCED PRODUCTIVITY FEATURES

## Cooling System Air Screen

Stationary air screen uses a hydraulically-powered revolving evacuation wand (see figure 6.1).

- Wand rotates at 35 rpm
- Material is positively pulled away from the stationary screen and deposited down and to the back of the combine
- Optional internal brush and an engine air screen guard

## Rotor Drive

Several improvements to the rotor drive assure reliable performance under high-power, demanding conditions (see figure 6.2).

- 5088 uses the same torque sensing belt width and 24° ramp angle as the 2588
- 6088 and 7088 use a wider 3-inch belt and enhanced 30° sheave ramp angle
- Improves horsepower transfer to the rotor gearbox

Heavy-duty three-speed rotor drive gear case

6088/7088 torque sensing units have additional features:

- Shaft size increased
- Bushing width increase
- Cam followers now have “captured” slides instead of rollers (5088 rotor drive system is same as 2588)

## Service Access

Rear ladder has been re-designed for easier operation, strength and safer access to rear service deck (see figure 6.3).

- Access to engine service and check points such as fuel fill, air cleaner and fluid levels is easier
- Large swing-up side panels assist in easy maintenance and service of the combine
- Easy access to all sides of the machine
- Side panels have quick-release latch design and gas strut or truss rod to hold panels open
- Transport locking mechanism to keep side panels secured during road transportation
- Optional under panel service lights
- Radiator access door swings open wide for easy access to radiator and coolers



Figure 6.1



Figure 6.2



Figure 6.3

# ENHANCED PRODUCTIVITY FEATURES

## Controls

- New multi-function propulsion lever (common with 20 Series)
- New A-Post instrumentation with increased functionality and performance
- Fully-portable AFS Pro 600 full-color touch-screen display
- Yield logging/mapping
- Automatic Crop Settings (ACS) option allows the operator to preset the machine for up to 60 crop conditions (must have in-cab sieve adjustment option)
- AccuGuide auto guidance with up to sub one-inch accuracy

## Operator Convenience

Outstanding visibility and safety features include:

- Stadium lighting for outstanding visibility when harvesting at night (*see figure 7.1*)
- Optional HID Lighting - 2 and 6 HID lighting packages give unprecedented clarity and visibility during nighttime operations, both ahead of the cutter bar and behind
- Optional rotating beacons are available

Three new seating choices are available. All use standard air-ride seat suspension.

- Heated red leather
- Sewn cloth bucket
- Standard cloth seat



Figure 7.1

# SAFETY

## Safety

Harvest is the culmination of a full year of hard work and great investment. We know harvest “windows of opportunity” are not always as wide as you would like, with weather and crop conditions having the final say on when the crop gets into the bin. Make sure you spend every available day harvesting, instead of recuperating because poor judgment resulted in an accident. Observe all Safety Instructions in the combine Operator's Manual, and these specific safety rules, for a safe and profitable harvest season.

- Be sure you re-read the Operator's Manual to review all safety instructions
- Be sure you read and understand the safety messages on all decals on your combine
- Set the parking break, turn off the engine and remove the key before leaving the cab for cleaning, adjusting or lubricating
- Solidly block or lower the feeder cylinder safety stand before working on or under the header. Keep ladders, steps and platforms free of trash and mud accumulations.
- Never start or move the combine until you are sure everyone is out of the way
- Never start the combine until the operator is familiar with all controls. This rule applies even if an experienced operator/trainer is present. Waiting until a quick decision is required to prevent an accident is not a good learning experience.
- Always put the shift lever in neutral before starting the engine
- **DO NOT** allow riders (except during training)
- Never enter the grain tank or engine compartment when the engine is running
- Many of the combine systems are electrically actuated. Unlike mechanical linkages that have a distinct and visible outcome when shifted or adjusted, activity such as unplugging an actuator may result in unexpected component movement. This accents the need to stop the combine engine before performing any service operation.
- Always stop your combine engine when refueling. **DO NOT** smoke while refilling the fuel tank.
- Always keep all guards and shields in place
- Drive at moderate speeds in the field and on the road. Keep the combine in gear when going down hill.
- Use extreme caution when removing the radiator cap to avoid contact with hot pressurized coolant. Allow the engine to cool before opening the system. If the cap must be removed while the system is hot, protect hands with a thick layer of rags to absorb spilled coolant. **DO NOT** wear gloves that can become soaked with hot fluid and will burn skin before gloves can be removed.



- Be sure everyone is clear of the area before unloading grain – flowing grain can trap an adult in 10 seconds or less
- Dress appropriately when performing service work. **DO NOT** wear loose clothing that can become entangled with the machine.
- Always engage feeder cylinder safety stand before working under feeder or header
- When transporting on the highway, double check bridge and overhead power line clearances. Remove and transport wide headers lengthwise to promote the safest possible conditions.
- Take frequent breaks to maintain maximum attention
- Be alert. If you're constantly alert, you'll be in a better position to handle emergencies.

## Fire Prevention

Few things could ruin an otherwise rewarding harvest more than a devastating combine fire. Spending some time each day keeping the combine clean and well-maintained is the best way to preserve harvest as a good memory, instead of something you would rather forget.

By nature, mature crops are dry and dirty, and are sources of considerable debris that can accumulate on harvesting equipment. During busy harvest-time, operators may not like taking the time to clean the combine daily. **The most appropriate cleaning time is at the end of the day. Any debris that may be near a hot surface, or is possibly already a smoldering pile, is removed before it becomes a problem.**

- Attempts to perform only major, time-consuming cleanings on a less-frequent basis will likely require **MORE TIME** in the course of the harvest season, than to make a proactive commitment to devote a few minutes to cleaning on a daily basis. Cleaning time is also a good time to perform a basic visual machine inspection.

Some additional “food for thought.” Modern, high-productivity combines are powerful machines, and along with power comes heat. Fire cannot start without heat and fuel. You cannot remove the heat from the engine, hydraulics and other hard-working systems, but you can remove the fuel source by keeping your combine clean.

Areas requiring special attention to keep combustible debris away from high heat are:

- The engine, specifically the exhaust manifold, turbocharger, muffler and exhaust pipe
- Hydrostatic pump, motor and hydraulic lines and tubes
- Brakes
- Electrical components
- Engine drives and all moving parts
- Batteries and battery cables
- Straw spreader drive gear compartments

Equip your combine with at least two fire extinguishers – one near the cab and another where it can be reached from the ground.

- It's a good idea to have at least one water-charged extinguisher on your combine. However, use a water extinguisher only on crop debris. Water applied to an oil fire may tend to spread the flames.
- Watch for fuel or hydraulic fluid leaks. Correct any fuel or hydraulic fluid leak immediately. Clean the machine thoroughly after any hydraulic fluid or fuel leaks or spills. Residual hydraulic fluid or fuel mixed with trash creates a very combustible mixture. This can make an accidental machine fire much harder to control.



**THINK SAFE.**



**WORK SAFE.**



**BE SAFE.**



# CONTROLS AND INSTRUMENTS

## Propulsion Control Lever

The propulsion control lever on 88 series combines is the same as 20 Series Axial-Flow combines (see figure 11.1). The lever handle includes switches to operate:

- Header raise/lower and tilt
- Reel raise/lower, fore-and-aft position
- Unloader swing and drive
- **NEW**–Header resume button enables header “Auto” modes including tilt if equipped. Toggles between header set positions 1 and 2.
- Quick-stop button stops the header, feeder and unloading auger with one pulse on the yellow button on the top of the handle. (To re-start drives, cycle control switches momentarily to the “off” position, then back “on.”)

Shift button on the back of the propulsion lever handle allows the operator to select secondary features (see figure 11.2).

- “Shift” plus header tilt right-left adjusts the edge offset of AccuGuide® assisted steering when enabled. “Nudges” a set distance each time button is pushed to adjust all guidance lines.
- “Shift” plus reel fore-and-aft controls draper header fore-and-aft tilt
- “Shift” plus header Resume applies headland mode by raising the header, disabling the acre counter, self-centering Terrain Tracker® and turning on the side “row finder” lights
- “Resume” returns header to last active set point, re-starts acre counting, auto tilt
- “Double-clicking” shift button engages AccuGuide®

### Example Headlands Mode and Header Height Set Point in Corn Head Application

- Set Point 1 at normal header height for standing corn
  - Set Point 2 for down corn at one end of field
1. Enter row, activate Set Point 2 for down corn
  2. Press “Resume” when leaving down corn area, entering standing corn, operate at Set Point 1
  3. Press “Shift+Resume” to enter Headland Mode at end of field. Header raises, acre counter stops, tilt centers, etc.
  4. Press “Resume” when re-entering row, header goes back to last active Set Point 1

5. Press “Resume” when entering down corn at opposite end, header lowers to Set Point 2
6. Press “Shift+Resume” to enter Headland Mode at end of field. Header raises, acre counter stops, tilt centers, etc.
7. Press “Resume” when re-entering row, header goes back to last active Set Point “2”

Continue operation in same way at each headland to automatically raise, then return header to last-used height setting when re-entering field.



Figure 11.1



Figure 11.2

### HEADER OPERATING MODES-COMBINES WITH GROUND HEIGHT AND PRESSURE SENSORS

Mode	Header Position	Working Setting
RTC (return-to-cut)/manual	Off ground, height sensors not touching	Feeder position
Auto height	Off ground, height sensors touching	Height above ground
Pressure float	On ground-grain/draper only	Ground pressure

# CONTROLS AND INSTRUMENTS

## Right Hand Console

Several control switches and adjustment knobs on the right console are used for a multitude of combine separator or header control adjustment (see figure 12.1). Some specific controls are:

- Reel Speed Selector—select Manual or Automatic
- Reel Speed Control—direct reel speed control in “Manual,” reel speed/ground speed offset in “Automatic”
- Minimum reel speed—sets minimum reel speed when in Automatic
- Auto Header Height Adjustment switch—change header height when in Automatic control
- Auto Header Height Set control—sets header height positions Setting 1 and Setting 2
- Field/Road Mode switch—road mode disables separator, feeder, reel drive/position, unloader drive/swing; enables transport speed
- In-cab sieve adjustment—allows electronic remote adjustment of upper and lower sieve clearance
- Concave clearance
- Cleaning fan rpm
- Rotor rpm

Combine and header setting values are displayed on the A-Post RCD monitor while adjustments are being made.

- Settings can be displayed during operation on the A-Post Custom LCD or RCD monitors



Figure 12.1



Figure 12.2

## A-Post Displays

The instrument panel A-Post display is made up of five basic segments (see figure 12.2).

- Three analog type gauges
- Warning indicator lamps
- Shaft speed, digital rpm and mph and header height indicator
- Reconfigurable LCD
- Control keypad

## Analog Gauges

The analog gauges include (see figure 12.3):

- Oil pressure gauge
- Low oil pressure warning light
- Coolant temperature gauge
- High coolant temperature warning light
- Fuel level gauge
- Low fuel level warning light

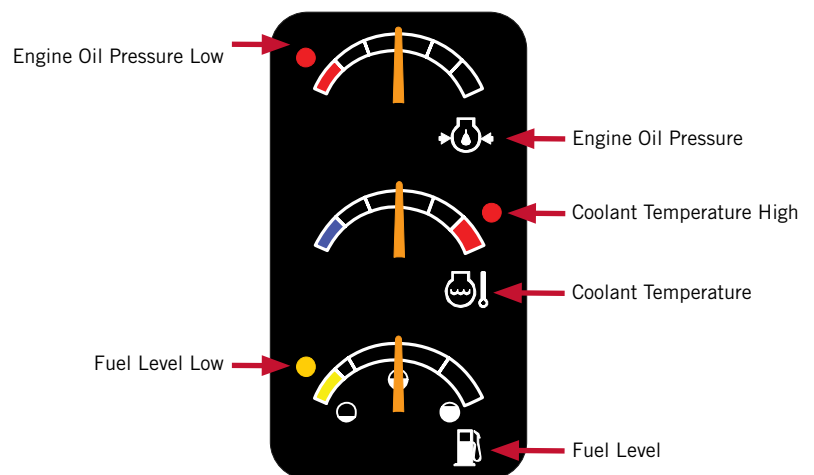


Figure 12.3

# CONTROLS AND INSTRUMENTS

## Warning Lamp Array

Warning lamp array provides operators with reminders of critical and non-critical conditions requiring operator attention (see figure 13.1). All warning lamps are illuminated on startup for a 1-2 second test. Indicators are displayed for:

- Engine warning—non-critical fault conditions
- Stop engine—critical engine conditions (low engine oil pressure, high coolant temperature, high intake manifold temperature; engine shuts down within 30 seconds of warning)
- Combine malfunction
- Header malfunction
- Park brake
- Water in fuel
- Coolant level low (not used)
- Intake manifold high temperature (2 levels)
- Automatic lube on
- Hydraulic fluid low-level indicator
- Hydraulic fluid temperature high
- Unloader auger on
- Trailer/header turn signals on
- Air filter restriction
- Unloader out

- Engine pre-heat
- Battery charge warning
- Grain tank full

Warning indicators are supplemented by four types of audible alarms.

- Laser alarms (sounds continuously while alarm condition is present)—**Shut Down Alarm**
- Klaxon alarm (sounds two times in succession)—**Alarms or Errors**
- Chime alarm (sounds once unless otherwise noted)—**Normal Machine Functions**
- High tone alarm (sounds three times in succession)—**Grain Tank Full**

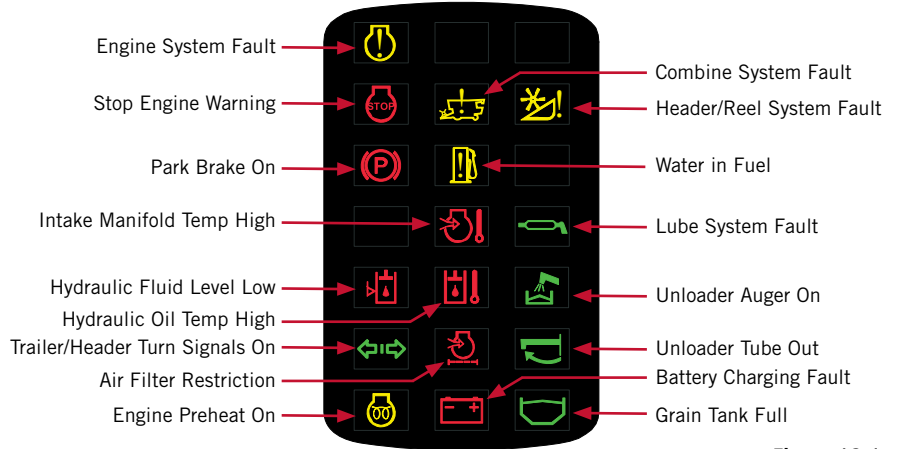


Figure 13.1

## Custom LCD Display

The custom LCD display is divided into three sections:

- Shaft speed monitor
- Tachometer
- Header position monitor

## Shaft Speed Monitor

Icons illuminate when combine separator component speed drops below set levels (see figure 13.2). Monitored speeds are:

- Feeder
- Rotor
- Clean grain elevator
- Beater or chopper
- Sieve shaker
- Residue spreader
- Tailings elevator
- Cleaning fan

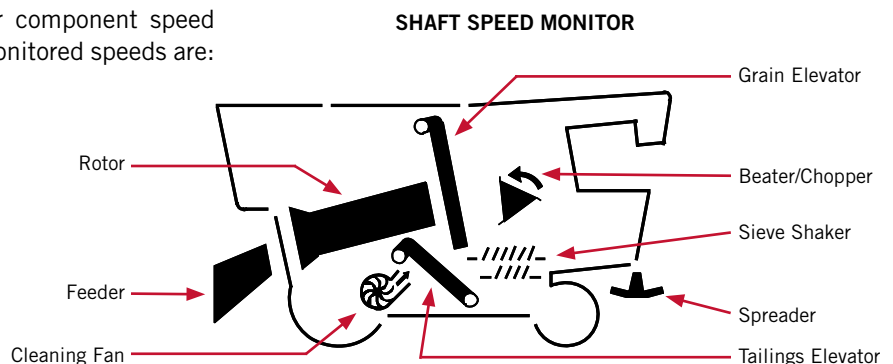


Figure 13.2

# CONTROLS AND INSTRUMENTS

## Tachometer Display

The **upper line** displays (see figure 14.1):

- Cleaning fan speed
- Engine rpm

The upper left button **(A)** on the keypad toggles between the display values (see figure 14.2).

An engine speed alarm is incorporated into the display. If the (1) feeder is engaged (2) engine speed falls below alarm set value, but (3) rpm stays above 1800 rpm; the alarm sounds, and the display value flashes. If any of these conditions changes, the alarm will stop. (Alarm level is set at the Set-up Alarm Screen.)

The **second line** displays:

- Rotor rpm
- Ground speed

The upper right button **(B)** on the keypad toggles between the display values.

The **third line** is the Header Position Monitor (see figure 14.3). The header position **(A)** and current header-operating mode **(B)** are displayed.

Manual—Activating Raise/Lower Switches—**(A)** = Feeder Position **(B)** = Momentary arrow in direction of movement

Return to Cut (RTC)— **(A)** = Feeder position **(B)** = Constant Up arrow

Auto Height Control— **(A)** = height above ground **(B)** = Constant Up and Down arrows

Pressure Float— **(A)** = percent ground pressure **(B)** = Constant Down arrow

## RCD (Reconfigurable LCD Display)

The RCD is divided into four screen sections capable of displaying four separate and independent pieces of information (see figure 14.4).

- Operator can select numerous control and monitor screens to be displayed
- Other information such as alarm, abort or error messages, notifications or service reminders may take priority over and temporarily replace selected monitor or adjustment displays

A 12-button keypad is used to control operator-selected displays (see figure 14.5). Four of the 12 buttons are used for screen navigation.

- Enter button number
- “Increase” setting value button
- “Decrease” setting value button
- Cancel or exit button

The remaining eight **function selection buttons** are used to change display and adjustment screens

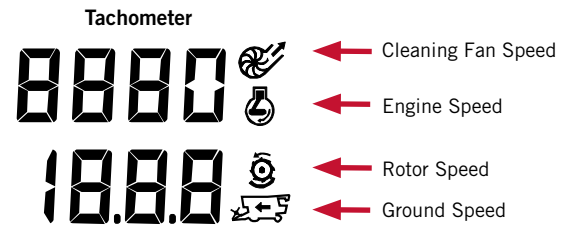


Figure 14.1

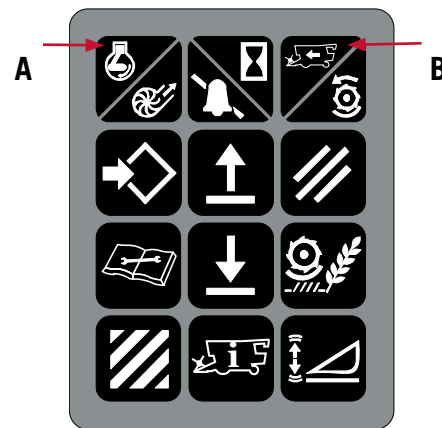


Figure 14.2

## Header Position Monitor

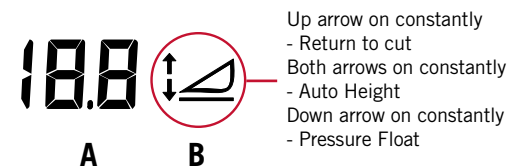


Figure 14.3

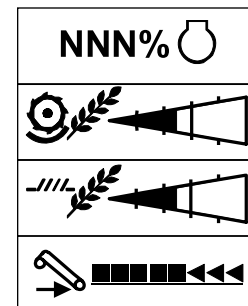


Figure 14.4

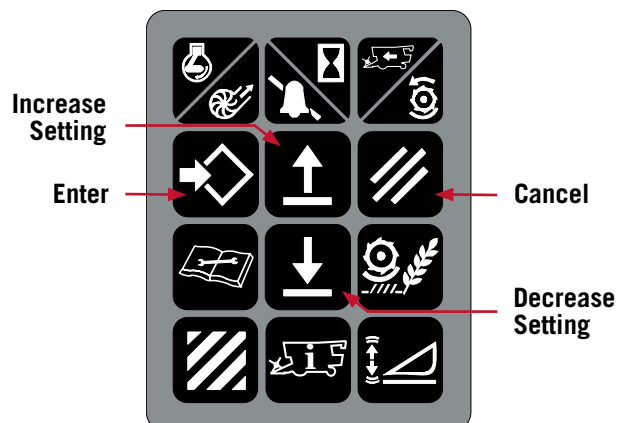



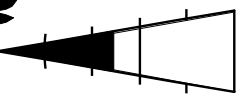

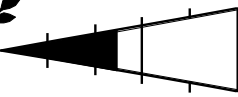

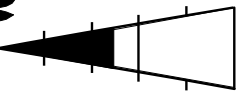






Figure 14.5

# CONTROLS AND INSTRUMENTS

	Harvest 1	Harvest 2	
% Engine Power	NNN% 	NNN% 	% Engine Power
Rotor Grain Loss	 	 	Total Grain Loss
Sieve Grain Loss	 		Header Lateral Tilt
Tailings Volume	 		Not Used in NA

Monitor screens are displayed by default when no other information is being requested by the user. Any of the navigation buttons, “Enter,” “Up,” “Down” or “Cancel” can be used to toggle between the two Harvest Screens.

Concave Clearance, Sieve Opening and Road Mode screens are displayed when corresponding right hand console switches are activated.

- Clearance adjustments are displayed live while the operator changes settings, and for 2.5 seconds after the switch is released
- Clearance settings can also be displayed on Combine info screens

Concave Clearance



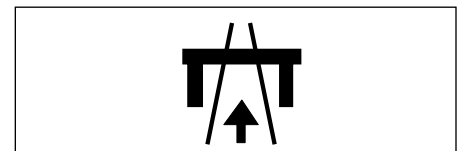
Upper Sieve Opening



Lower Sieve Opening



Road Mode



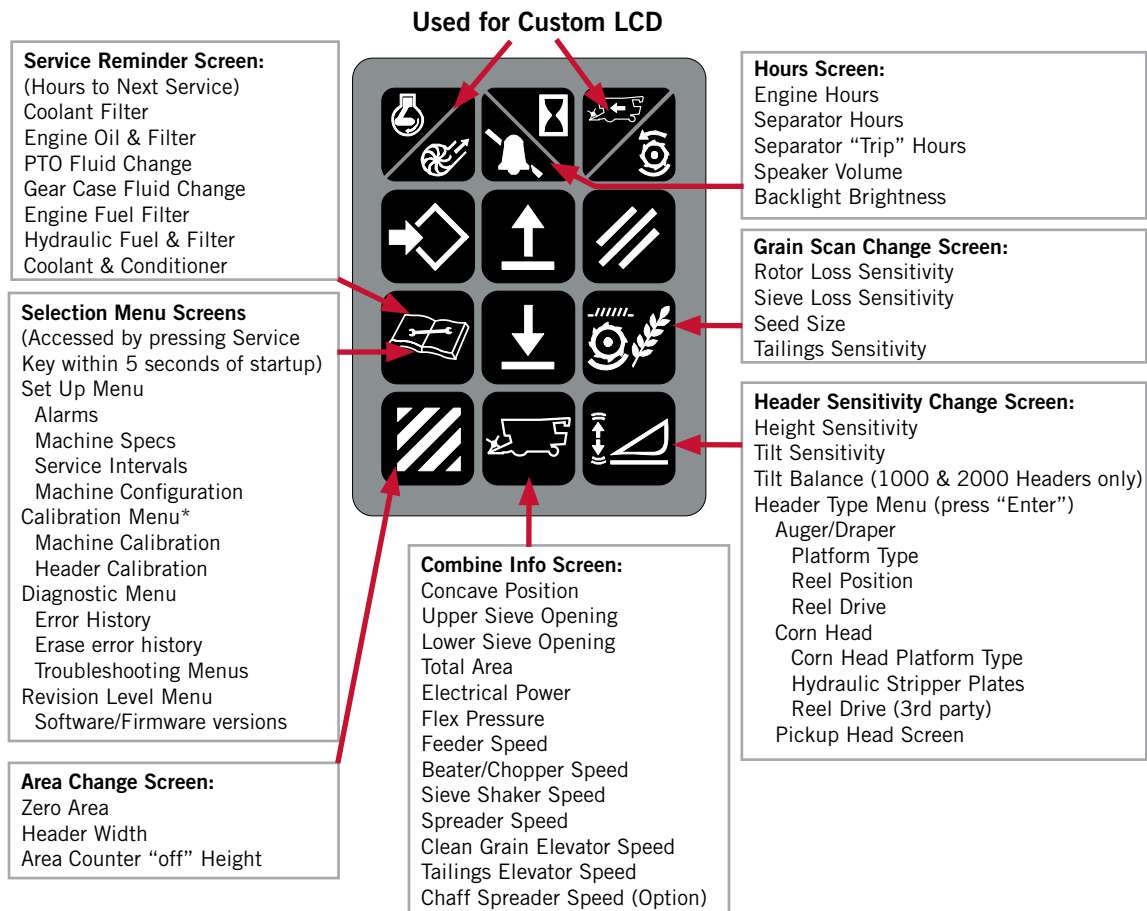
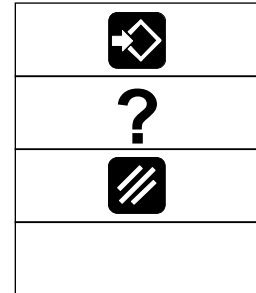
## RCD NAVIGATION (see figure 14.5)

- Use the designated function selection key to display the desired screen
- Use the same key to scroll through and select the individual changeable item
- Use “Up” and “Down” keys to adjust changeable item settings or values
- Use “Enter” key to save new settings
- Use “Cancel” to return to the previous screen

# CONTROLS AND INSTRUMENTS

## \* Enter/Cancel Screen

Enter/Cancel Screen will display if data has been changed and a key is pressed attempting to move to another changeable item. Screen prompts user to either Save or Cancel previous entries before changing to new item.

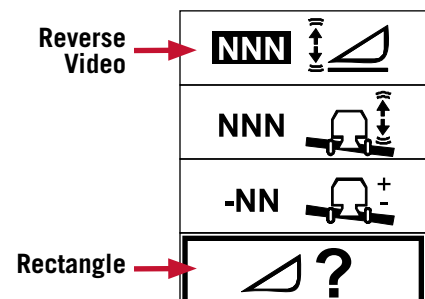


\* Numerous calibration screens allow the operator to calibrate electronic controllers and system components so they accurately correspond to physical positions and conditions. Calibration procedures are automated, and require operator intervention to start and end the processes. The Operator's Manual provides instructions for the correct calibration of various systems such as concaves and sieve clearances and operating rpm for fan, rotor, etc. Consult your Case IH dealer.

## Two types of changeable item highlighting:

- Reverse Video - value of item can be changed directly by pressing "increase" or "decrease" keys
- Rectangle around perimeter of cell—another set of selections (submenu) are available for this item
- Use designated function selection key to move rectangle to desired selection
- Press "Enter" key to access next selections\*\*
- Final selections will be directly changeable Reverse Video

\*\* Some functions have another level of selections (rectangle). Examples are: Header Type; Selection Menu items - i.e. Set-Up, Calibration, Diagnostic, Revision Level

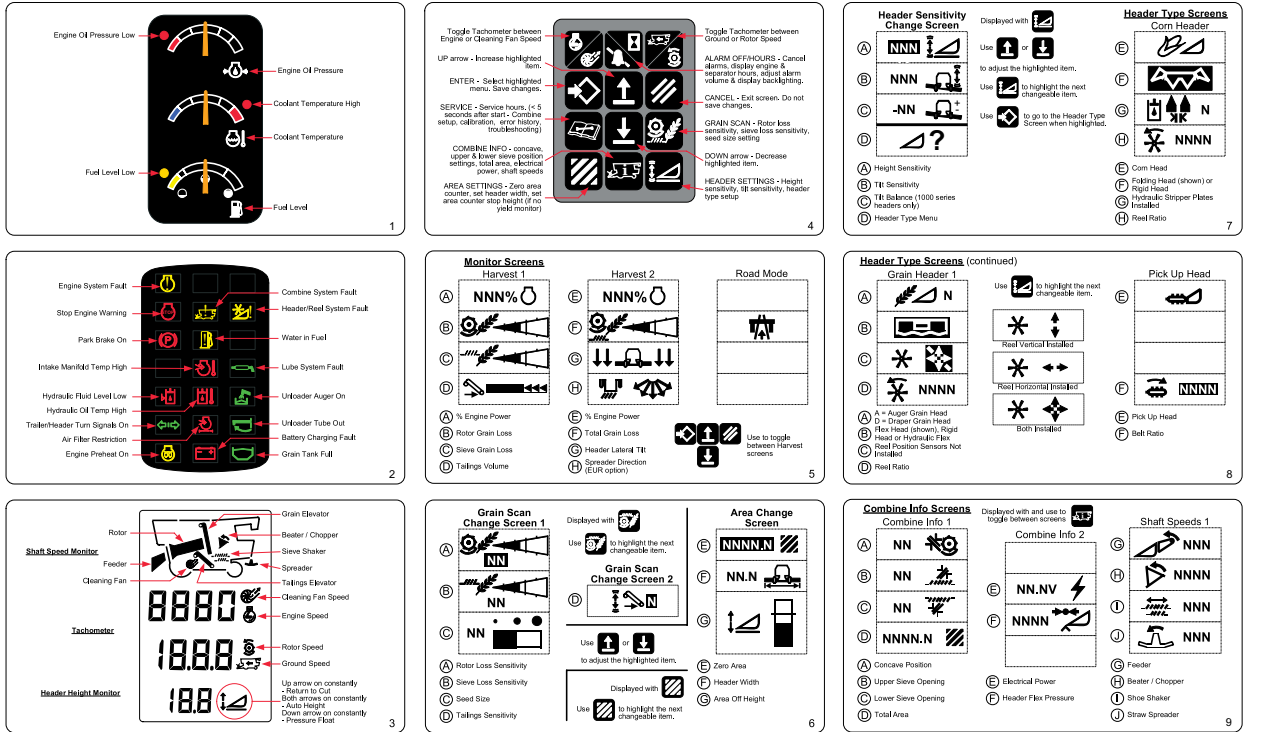


# CONTROLS AND INSTRUMENTS

## Quick Reference Card

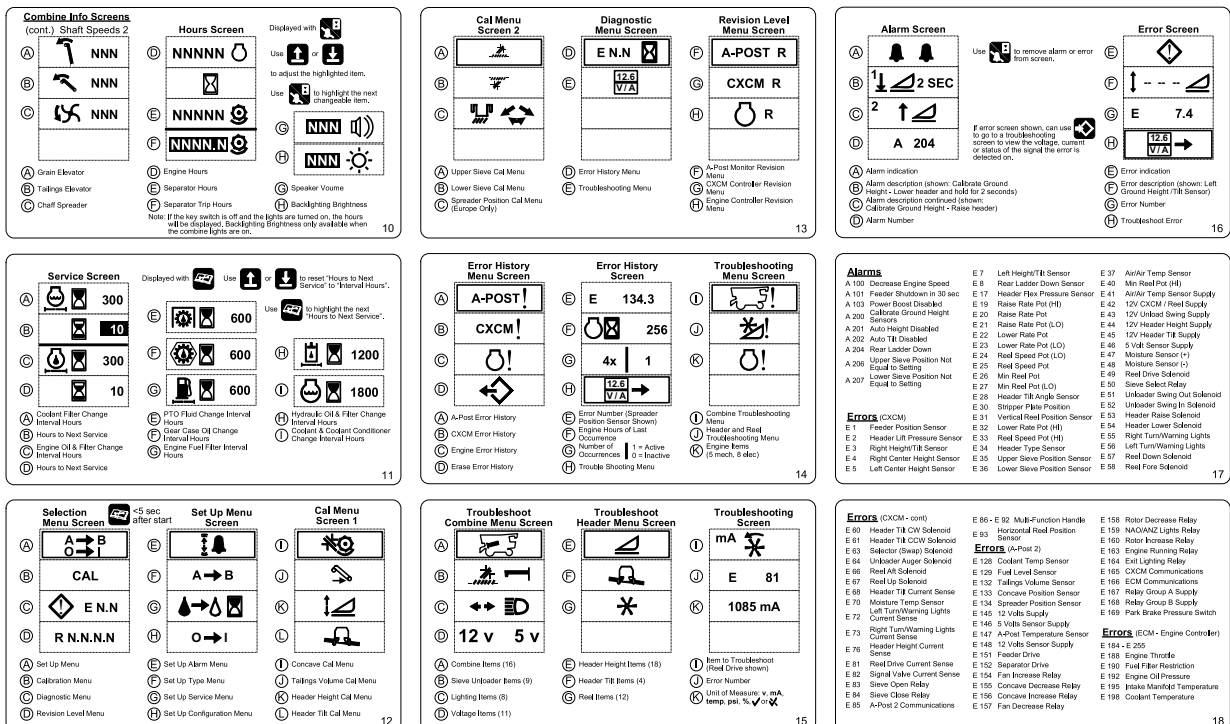
A Quick Reference Card is included with your Operator's Manual. It is a handy tool for step-by-step help when navigating the A-Post displays (see figure 17.1).

### "88" Series Axial Flow Combine A-Post Navigation Quick Reference Card



87479290 Rev. A

### "88" Series Axial Flow Combine A-Post Navigation Quick Reference Card



Software version 1.10.0 and later

Figure 17.1

# CONTROLS AND INSTRUMENTS

## Automatic Climate Control

The Automatic Temperature Control system can be used in several ways to provide the operator with optimal cab environmental control (see figure 18.1).

- The climate control switch is pressed to turn on the automatic climate control function. A letter **(A)** is shown in the display when automatic climate control is enabled. If the switch is pressed a second time, the function is turned off.
- The de-fog control switch is pressed to turn the de-fog function on. A de-fog icon is shown in the display when de-fog is enabled. Pressing the button again turns de-fog off.
- The temperature control knob is turned clockwise to increase temperature, and counter-clockwise to decrease temperature. Automatic temperature control is achieved when the dial is placed in the solid blue or red bands. The display indicates the desired cab temperature based on the adjustment of the temperature control (see figure 18.2).
- If the knob is turned completely in either direction, the system will operate in either maximum heat (red) or maximum cool (blue) mode, with no automatic control
- The blower control is infinitely adjustable, and is turned clockwise to increase blower speed. When the automatic mode is enabled, the blower speed will increase and decrease as necessary to maintain consistent temperature. If the blower control is adjusted while in automatic mode, the blower speed will be constant, and the system will attempt to maintain constant temperature. However, the limited blower speed may prevent even temperature control.
- Cycling the climate control switch will return the blower to automatic control
- A “Service Manual” symbol in the display indicates a system problem requiring attention

## Automatic Crop Settings (ACS)

The Automatic Crop Settings feature, or ACS, is available on combines equipped with the AFS Pro 600 display, and in-cab sieve adjustment options. With ACS, working condition settings for various crops can be stored and recalled for later use. ACS provides automatic adjustment of the cleaning fan speed, rotor speed, concave position, upper sieve opening and lower sieve opening.

- Refer to the Pro 600 Operator's Manual for specific screen navigation procedures

To use ACS for the first time, the system must be enabled in the Pro 600. In the combine set up screen (see figure 18.3).

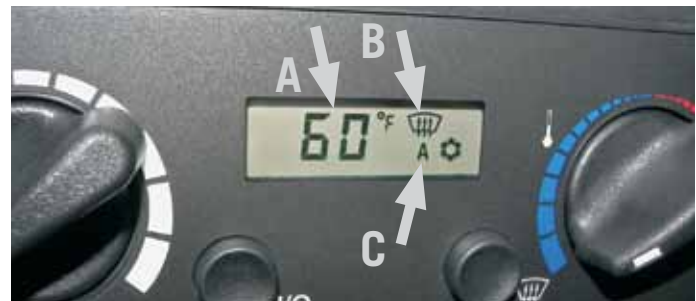
- ACS enable screen is selected. Select “On” to enable ACS, which will remain enabled unless intentionally disabled.

Create a new Pro 600 layout, including Crop Type, Work Condition and Machine Settings selections.



**A. Blower Control**  
**B. Left Climate Control Switch - Right-De-fog Switch**  
**C. Temperature Control**

Figure 18.1



**A. Digital Temperature Setting**  
**B. De-fog Mode Indicator**  
**C. Automatic Mode Indicator**

Figure 18.2

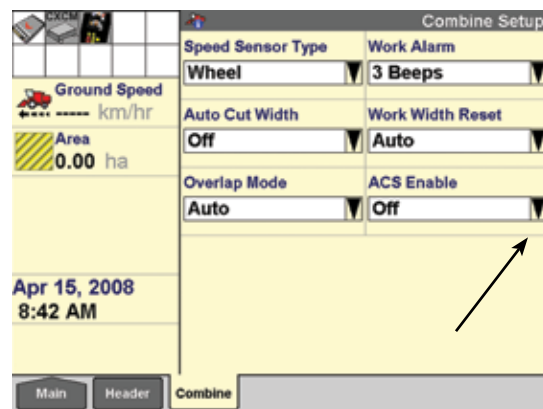


Figure 18.3

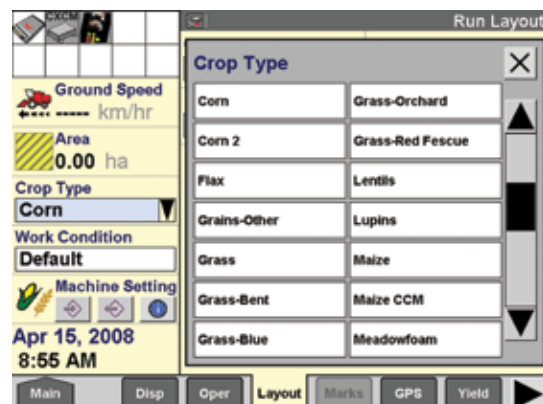


Figure 18.4

# CONTROLS AND INSTRUMENTS

## Automatic Crop Settings ACS (cont.)

- Touch the Crop Type cell and select the applicable crop in the existing list of Work Conditions (see figure 18.4)
- Default settings are the factory settings for the selected Crop Type. Default settings cannot be overwritten. Adjustments to factory settings must be saved to a new condition name.
- Touch the Work Condition cell (see figure 19.1). Select an existing Work Condition or touch “New” to create a new condition (see figure 19.2). A keypad will be displayed to name new conditions or edit existing conditions (see figure 19.3).
- Selecting none will disable ACS

Three buttons in the AFS Pro 600 Machine Setting window will control the ACS system once Crop Type and Work Condition are set (see figure 19.4).

- “Work Conditions Save” ① saves the current machine settings to the currently selected Crop Type and Work Condition
- The “Save” button will be grayed out and inactive if the Work Condition is “Default” or if the current machine settings are the same as the currently selected condition
- “Work Conditions Set/Recall” ② applies machine settings for the currently selected Work Condition
- Selection will not be active if machine settings match the selected Work Condition
- Use “Save/Recall” to activate previous or default settings when starting a new Crop Type or Work Condition
- “Work Condition Info Show” ③ displays current machine settings compared to Work Condition setting values
- Allows operator to evaluate deviations from current condition setting values
- Operator may choose to create a new condition to save current settings for future use

### Warning Icons

Three different warning icons may appear in the status warning area in the upper left corner of the screen (see figure 19.5).

- “Cannot reach machine setting” ① may be displayed when the machine component cannot meet the setting request. Examples would be rotor speed outside the currently selected rotor speed range, or sieve settings that cannot be achieved due to debris between the sieve fingers.
- “Shift Rotor Gear Down” ② or “Shift Rotor Gear Up” ③ icons indicate the rotor has reached the maximum or minimum speed for the selected rotor gearbox range, and a range shift is necessary.

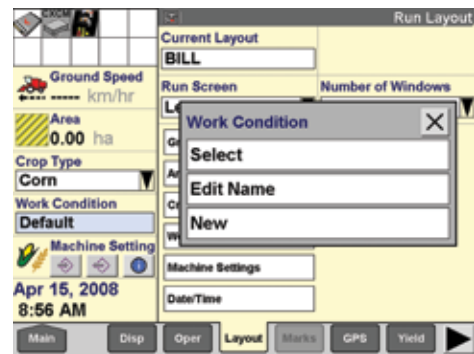


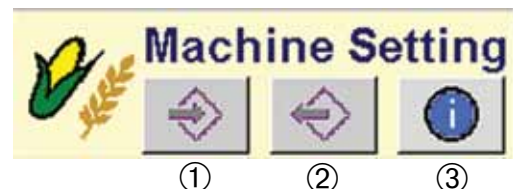
Figure 19.1



Figure 19.2



Figure 19.3



**IMPORTANT**—Machine settings will not be Saved or Applied unless operator presses Button ① (Save), or Button ② (Set/Recall) after creating or changing Work Condition

Figure 19.4

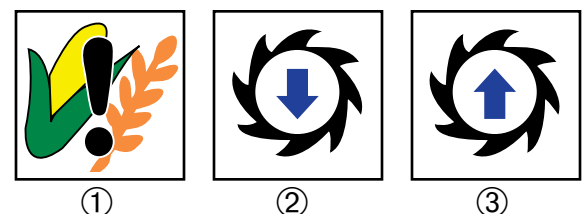


Figure 19.5

# CONTROLS AND INSTRUMENTS

## Using ACS

The engine must be running and the separator on to apply ACS settings.

- Mechanical settings change at the same rate as when right-hand console switches are activated manually
- Settings can be monitored on the A-Post display while the condition is being applied. Setting displays function the same as when making manual settings using console switches.
- All rpm settings are adjusted to high-idle, threshing speed, therefore displayed rpm may differ if the condition is applied at a lower engine rpm
- Any time a condition is requested that matches current settings, the condition will be grayed out and inactive

Up to 60 different Work Conditions can be stored by the ACS system. Operators are encouraged to create new Work Conditions as necessary when harvest conditions that are likely to repeat are encountered, and saving machine settings for later use will be convenient and efficient.

Examples of harvest conditions in which new Work Conditions may be created are:

- Changing moisture conditions for crop maturity or time of day
- Changing settings due spot conditions such as weed infestations or wet areas
- Crop varieties with significantly different threshing or separating characteristics

Starting a new crop with default settings is a common method of machine set up. As the machine settings are fine-tuned, the operator should use the “Show Info” button to compare current settings to the default condition.

- If settings vary greatly from default, consider creating a new condition that may be treated as the starting condition or “default” for future use. Remember, factory default settings cannot be overwritten.



# MAINTENANCE

During harvest time, it is easy to get in a hurry and perhaps neglect one or two “minor” maintenance items. Before long, more items may start to seem “minor,” in an effort to get to the field a few minutes sooner. Then, a breakdown may be a reminder that no maintenance item is “minor.” Not only will the repair be more costly than maintenance, it will be much more time-consuming. **Be sure to follow all the maintenance recommendations in your Operator's Manual, and enhance your combine productivity all season long.**

## ENGINE COMPARTMENT



Refer to Table 23.1

Figure 21.1

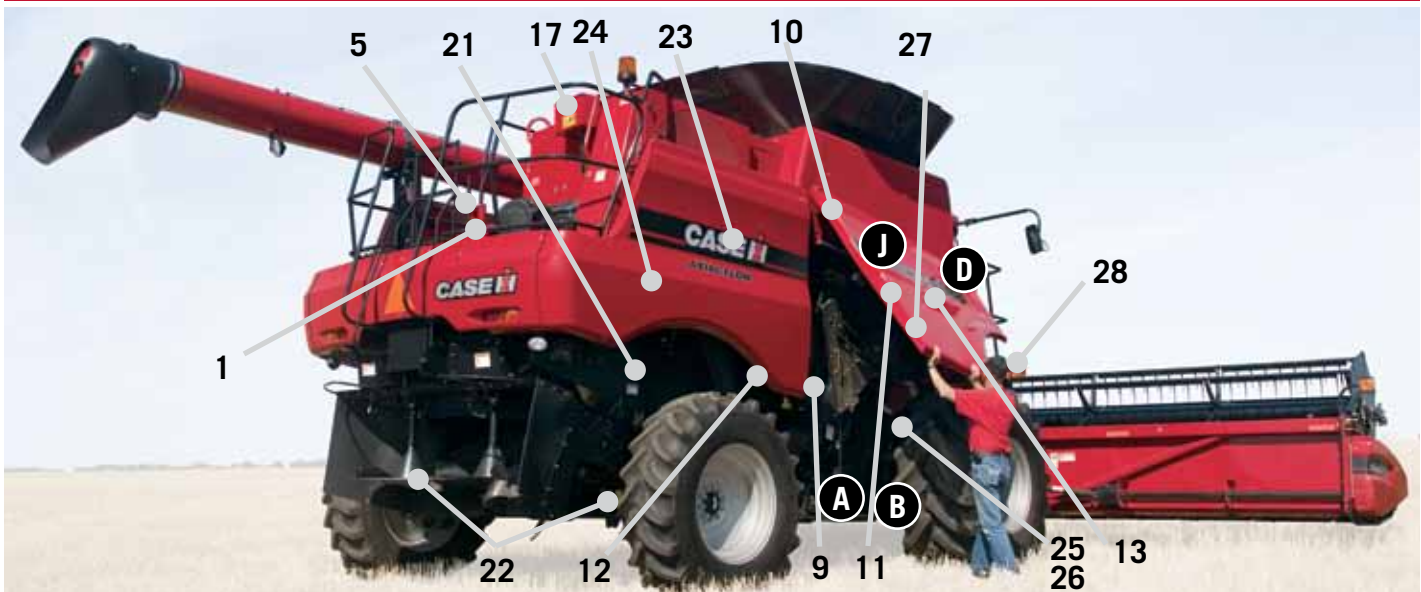
## ROTOR DRIVE



Refer to Table 23.1

Figure 21.2

# MAINTENANCE



Refer to Table 23.1

Figure 22.1



Refer to Table 23.1

Figure 22.2

- ① Machine must be parked on level ground, with header lowered when checking hydraulic oil level.
- ② Engine oil must meet or exceed API Service category CI-4. Refer to Operator's Manual for the correct viscosity for local temperature and operating conditions.
- ③ Use only heavy-duty, low silicate coolant. Automotive anti-freeze may not be low silicate, and should **NOT** be used. Mix ethylene glycol and clean water in 50/50 ratio for best protection. Change coolant and coolant conditioner filter every 2000 hours.
- ④ The air filter should be serviced when the Air Filter Restriction Indicator illuminates. Frequently perform a visual inspection of joints, clamps and gaskets in the air induction system. Follow Operator's Manual filter service procedures to assure reliable air filtration.
- ⑤ Apply **ONLY** two pumps of grease.
- ⑥ Lubricate chains with Case IH Chain and Cable Lube (M20832) or SAE 30 or heavier engine oil. Avoid excessive lubrication in severe dirty conditions. Lubricate chains after operation while chains are warm, allowing lubricant to freely flow into the chain joints and bushings. Do not lubricate tailings, feeder or clean grain elevator chains that run in grain.
- ⑦ Pump until grease comes out of rear seal.
- ⑧ Check daily for the first week of initial use. Re-torque front wheels to 1000 ft lb, rear wheels to 302-363 ft lb (non-powered) or 406-450 ft lb (powered). See specific instructions in Operator's Manual for initial tightening procedure when wheels are re-mounted.
- ⑨ Refer to tire inflation/header size chart in Operator's Manual.
- ⑩ Change/service fuel filters at specified interval, or when power loss is observed. Change the fuel tank vent filter every 600 hours.

# MAINTENANCE

SERVICE INTERVAL		REF	DESCRIPTION	LUBRICANT
CHECK	LUBE CHANGE			
AR=AS REQUIRED				
AR	AR	1	Air Filter	④
AR	600 ⑩	2	Fuel Filter	
10		3	Alternator Screen	
10	300	4	Engine Oil Level	AKCELA No.1 Engine Oil ②
10 ①	1200	5	Hydraulic Reservoir Level	AKCELA Hy-Tran
	10	6	Rotor Driven Pulley	AKCELA 251H EP ⑦
	10	7	Rotor Driven Pulley Cam Bearings-2	AKCELA 251H EP
10		8	Rock Trap-Empty	
10	50	9	Moisture Sensor (if equipped)	
10	100	10	Grain Elevator Drive Chain-Oil	Chain Lube ⑥
10	50	11	Tailings Elevator Drive Chain-Oil	Chain Lube ⑥
10		12	Chaffer Hanger Bearing (RH & LH)	AKCELA 251H EP
10		13	Tailings Delivery Auger Bearing	AKCELA 251H EP
	50	14	Rotor Speed Control Bushings, Front	AKCELA 251H EP
	50	15	Rotor Drive Pulley	AKCELA 251H EP
	50	16	Rotor Speed Control Bearing, Rear	AKCELA 251H EP ⑤
50	2000	17	Coolant Level	Ethylene Glycol Mix ③
	50	18	Auxiliary Pump Tensioner Arm	AKCELA 251H EP
50 ⑨		19	Tire Pressure	
	50	20	Rock Trap Drive Chain	Chain Lube ⑥
50 ⑩		21	Fuel System Water Separator-Drain	
	50	22	Steering Axle Ball Joints-2	AKCELA 251H EP
	50	23	Straw Chopper Idler Arm	AKCELA 251H EP
	50	24	Straw Spreader Idler Arm	AKCELA 251H EP
	50	25	Cleaning Unit Idler Arm	AKCELA 251H EP
	50	26	Cleaning Fan Pulley	AKCELA 251H EP
	50	27	Fan Drive Belt Tightener Arm	AKCELA 251H EP
	50	28	Feeder Engage Idler Arm	AKCELA 251H EP
	50	29	Header Jackshaft Belt Idler Arm	AKCELA 251H EP
	50	30	Unloader Drive Tensioner Arm	AKCELA 251H EP
50		31	Feeder Reverser	
	50	32	Unloader & Auger Drive Chains	Chain Lube ⑥
100 ⑧		33	Wheel Nut & Bolt Torque	
100	100	NA	100 Hour Lubrication & Maintenance	Per Operator's Manual
300	300	NA	300 Hour Lubrication & Maintenance	Per Operator's Manual
600	600	NA	600 Hour Lubrication & Maintenance	Per Operator's Manual
1200	1200	NA	1200 Hour Lubrication & Maintenance	Per Operator's Manual
GEARBOX SERVICE				
SERVICE INTERVAL		REF	DESCRIPTION	LUBRICANT
CHECK	LUBE CHANGE			
100	600	A	Transmission	AKCELA Hy-Tran ULTRA
100	600	B	Final Drives	AKCELA 135 H EP 85W-140 Gear Lube
100	600	C	PTO Housing	AKCELA Hy-Tran ULTRA
100	600	D	Feeder & Cleaning Fan Gear Case	AKCELA Gear Lubricant SSL SAE 75W-90
100	600	G	Rotor Gear Case	AKCELA 135 H EP 85W-140 Gear Lube
100	600	H	Straw Chopper Gear Case (if equipped)	AKCELA Hy-Tran ULTRA
300	600	I	2-Speed Feeder Gear Case (if equipped)	AKCELA Hy-Tran ULTRA
300	600	J	Inclined Auger Gear Case	AKCELA 135 H EP 85W-140 Gear Lube
300	600	E	Lower Unloader Gear Case	AKCELA 135 H EP 85W-140 Gear Lube
600		F	Upper Unloader Gear Case	AKCELA 135 H EP 85W-140 Gear Lube

Figure 21.1 Engine Compartment

Figure 21.2 Rotor Drive

Figure 22.1

Figure 22.2

Table 23.1

# MAINTENANCE

## Rock Trap

The mechanical rock trap on current 88 Series and prior model Axial-Flow combines is mounted at the top of the feeder housing, directly in front of the rotor. The rock trap uses a 3-blade beater to direct stones from the crop flow from the feeder to the rotor downward into the rock trap (see figure 24.1). The rock trap will fill with grain and crop material during normal use, however the force of rocks expelled from the beater will push rocks into the trap.

The rock trap must be emptied daily, more often if harvesting in rocky conditions (see figure 24.2).

The balance between optimum rock protection performance and feeder capacity is determined by the beater speed and beater blade extension adjustments.

- Rock trap performance is greatest with faster beater speed, and beater extensions adjusted to the fully extended position (see figure 24.3)

Excessive beater speed and blade extension may restrict crop flow. The beater blades passing rapidly past the feeder form a “wall” that inhibits the flow of material past the beater, and on to the rotor.

- Beater blade extensions are mounted with slotted holes. Retracting extensions will allow the greatest material flow, however rock protection will be reduced.
- Sprockets on the left side of the feeder are used to adjust beater speed (see figure 24.4). A 23-tooth driven sprocket is standard equipment on 88 Series combines, and drives the beater at 612 rpm at full throttle. This speed provides a good balance of rock protection while preventing wrapping of green, weedy crop material.
- A 35/18 tooth set is available from your Case IH dealer for a beater speed of 913 rpm. The higher speed provides enhanced rock protection and feeding.

Depending on feeding conditions and the number of rocks that could potentially be picked up while harvesting, operators need to make adjustments to speed and blade extension to protect the combine with minimal impact on feeding performance.

- In tough feeding conditions or material wrapping, such as a high degree of green stems, serrated blade extensions can be ordered from your Case IH dealer and installed on the beater to improve feeding aggressiveness
- Lower beater speeds will also reduce the incidence of wrapping

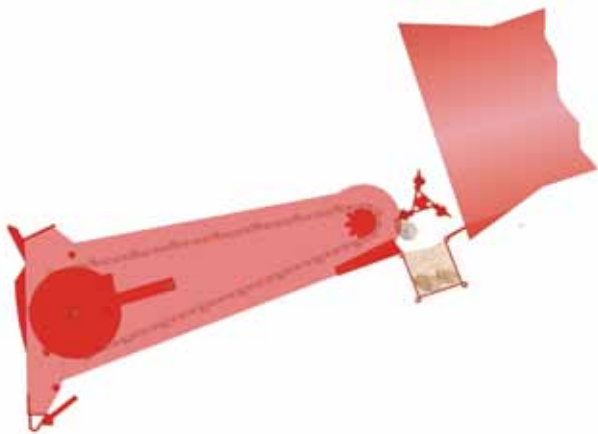


Figure 24.1

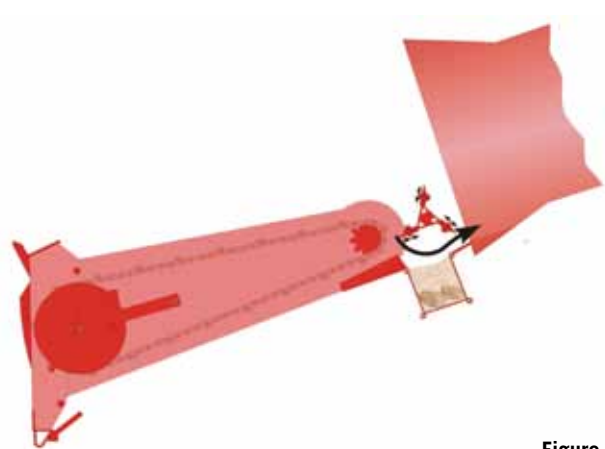


Figure 24.3



Figure 24.2



Figure 24.4

## AFX Rotor Impeller Blade Wear

The AFX rotor impeller can wear significantly before adverse feeding performance is observed. As the impeller wears, the distance between the impeller and transition cone does not vary greatly, and has little effect on crop flow.

- Wear may be somewhat uneven, especially in small grains. This is normal, and should not be cause for replacement (see figure 25.1).
- Wear that develops a noticeable “hook” ① may lead to hair pinning of material, and impaired flow. Impeller replacement is necessary in this case (see figure 25.2).
- Replacement is indicated when wear progresses into mounting bolt holes, or feeding is noticeably affected. Your Case IH dealer can refer to Service Bulletin NHE SB 029 05 for the correct method to measure impeller wear to determine if replacement is suggested (see figure 25.3).

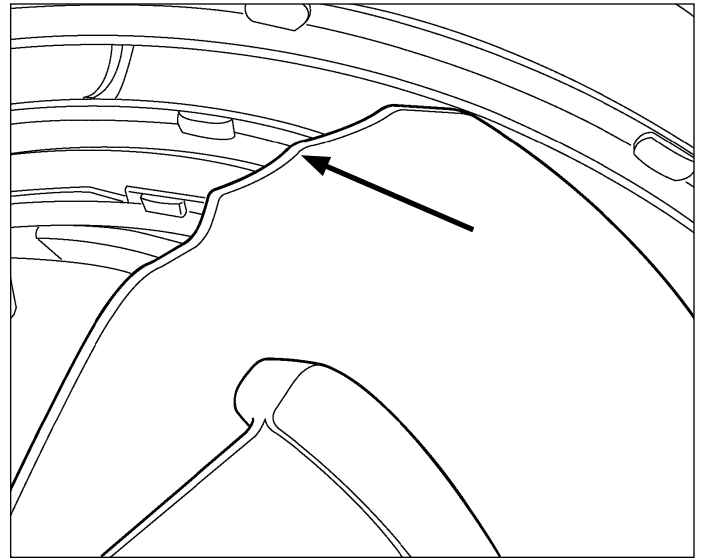


Figure 25.1

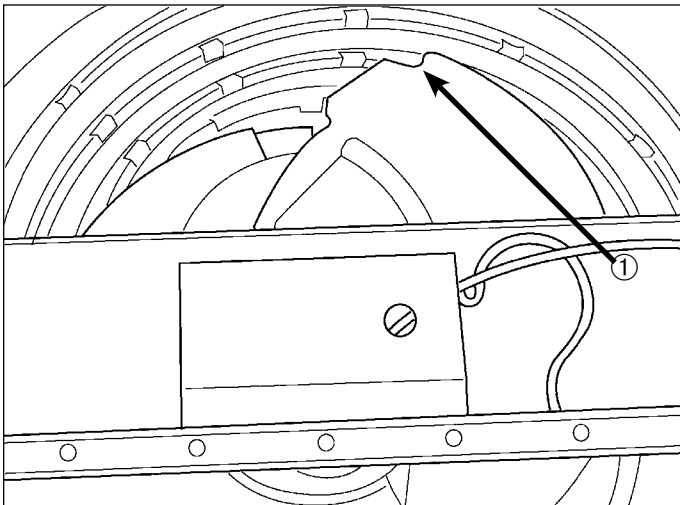


Figure 25.2

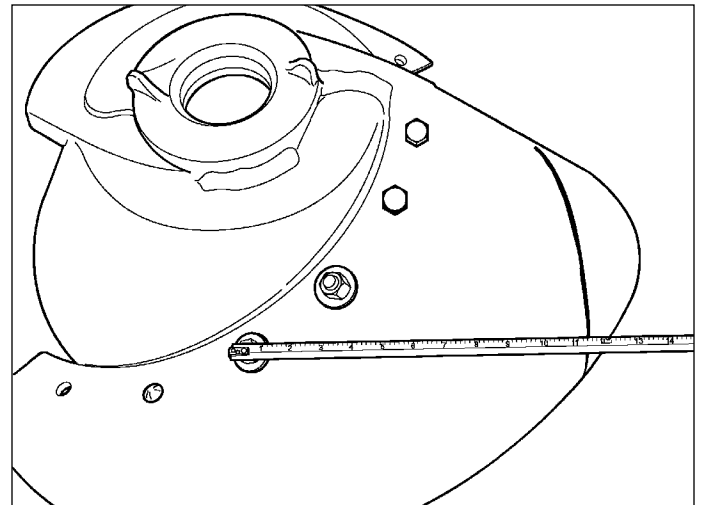


Figure 25.3

# MAINTENANCE

## Biodiesel Fuel

The use of biodiesel fuel is on the rise. A biofuel blend, up to a maximum of 5% (B5) has been approved for use in Case IH diesel engines. While biodiesel has distinct advantages such as its clean burning characteristics, users of biodiesel should be aware of some specific conditions.

- Biodiesel blends attract more moisture, and may require more frequent water separator draining
- Biodiesel should **NOT** be left in engines that are stored more than four months
- A lower cloud point may contribute to harder cold weather starting, making biodiesel less attractive than conventional diesel fuel for winter use
- Depending on fuel quality, more frequent filter changes may be required

In addition to low-emissions, other biodiesel advantages include:

- Biodiesel mixes well with conventional diesel fuel
- Oil change intervals are not affected with biodiesel use

As with all other fuels, purchase high quality biodiesel fuel from known reputable suppliers to assure trouble-free combine operation.

## Wheel Bolt Torque

Wheel bolt torque must be checked when new and periodically thereafter. Refer to the Operator's Manual for correct torque for your combine. An accurate torque wrench is necessary to confirm correct tightening values.

## Welding on Combines

Microcomputers and solid-state electrical components have become a way of life, and today's combines are no exception. This makes it essential that special precautions be taken prior to welding **ANYWHERE** on the combine. Solid-state components have little tolerance for errant voltage. The high current flow during the welding process can damage sensitive controllers and components on the combine, with disastrous consequences.

- Disconnect **ALL** battery cables prior to welding. This includes positive **AND** negative cables. (The electrical system uses two 12-volt batteries connected in parallel. This means that both positive cables connect to the electrical system, and both negative cables connect to ground.)
- Follow Operator's Manual safety instructions for cable removal, disconnecting negative cables first, and re-connecting negative cables last.





# COMBINE ADJUSTMENTS

## AFX Rotor—Initial Crop Settings

The threshing, separating and cleaning settings in the table below (*table 28.1*) are furnished only as a guide, and all settings shown are for average crop conditions. Different crop and field conditions may require deviations from shown settings. Use good threshing procedure and past experience to produce desired separation and cleaning results.

CROP	ROTOR		CONCAVE		CHAFFER SETTING (INCH) ⑦				SHOE SETTING		FAN SPEED	GRATE TYPE
	SPEED ⑨	GEAR RANGE	INDICATOR	TYPE ④	TYPE (INCH)	FRONT	MIDDLE	REAR	TYPE	SETTING (INCH)		
Alfalfa	650	Second	5	SW	1 1/8	1/4	3/8	3/8	1 1/8	Round Hole	500	Slot
Barley	700	Third	10	SW	1 1/8	1/2	1/2	5/8	1 1/8	3/8	1000	Slot
Lentil Beans	300	First	10	LW	1 1/8	1/2	1/2	5/8	1 1/8	1/8	550	Slot
Pinto Beans	300	First	15	LW	1 1/8	1/2	1/2	1/2	1 1/8	3/8	850	Slot
Sunflower	300	First	25	LW	1 1/8	3/8	1/2	5/8	1 1/8	5/16	770	Bar
Grass ⑤	550	Second	10-20	SW	1 1/8	1/4	3/8	3/8	1 1/8	1/4	450	Slot/Solid
Bentgrass ⑤	900	Third	0	SW	1 1/8	1/4	3/8	3/8	1 1/8	1/16	450	Slot
Bluegrass ⑤	400	First	7-8	SW	1 1/8	3/8	1/2	1/2	1 1/8	1/16	500	Slot
Brome ⑤ ⑧	500	Second	15	SW	1 1/8	5/8	3/4	3/4	1 1/8	5/16	650	Slot
Rye ⑤	650	Second	20-25	SW	1 1/8	3/8	1/2	1/2	1 1/8	1/4	450	Slot
White Clover ⑤	900	Third	0	SW	1 1/8	3/8	1/2	1/2	1 1/8	1/16	500	Slot
Corn	400	Second	15-25	LW	1 5/8 CLOSZ	1/2	1/2	5/8	1 5/8	3/8	1100	Bar
	500				1 5/8 CORN	1/4	1/2	1/2	CLOSZ	5/16	1200	
Corn (w/straight separator bars) ① ②	300	First or Second	15-25	LW	1 5/8 CLOSZ	1/2	1/2	5/8	1 5/8	9/16	1000	Bar
	450				1 5/8 CORN	1/4	1/2	1/2	CLOSZ	1/2	1200	
Edible Beans (Navy, Pinto)	300	First	15-25	LW/SL	1 1/8	1/2	1/2	1/2	1 1/8	3/8	900	Bar
	400				1 5/8 CLOSZ	1/8	3/8	3/8	1 5/8 CLOSZ	5/16	1100	
Flax	850	Third	5	SW	1 1/8	1/4	1/4	1/2	1 1/8	1/8	500	Slot
Maize/Milo	450	Second	15	LW	1 1/8	3/8	1/2	1/2	1 1/8	5/16	1100	Bar
					1 5/8 CLOSZ				1 5/8 CLOSZ			
Mustard	300	First	20	SW	1 1/8	1/2	1/2	1/2	1 1/8	1/16	800	Slot
Oats	600	Second	15	LW	1 1/8	1/2	1/2	5/8	1 1/8	3/8	780	Slot
Popcorn	400	First	5-15	LW	3/8	3/8	1/2	1/4	1 1/8	3/8	700	Bar
Peas - Black Eye	300	First	10	LW	1 1/8	1/2	1/2	1/2	1 1/8	3/8	700	Bar
Rape	400	First	20	SW	1 1/8	1/4	3/8	1/2	1 1/8	1/16	600	Slot
Rice ③ ②	850	Third	10	LW	1 1/8	3/8	3/8	1/2	1 1/8	5/16	880	Bar
Wild Rice	600	Second	5	LW	1 1/8	1/2	1/2	1/2	1 1/8	9/16	850	Bar
Safflower	300	First	20	LW	1 1/8	3/8	1/2	5/8	1 1/8	5/16	800	Bar
Soybeans ⑥	350	First or Second	15-20	LW	1 1/8	1/2	5/8	5/8	1 1/8	3/8	1050	Bar
	650											
Wheat ①	1050	Third	10	SW	1 1/8	1/4	1/2	1/2	1 1/8	1/4	1050	Slot

① Straight separator bars may be needed for harvesting corn yielding more than 150 bushels per acre (9 400 kg/ha) and in other crops during dry conditions. Increase fan speed to 1250 rpm in wet corn.

② Once installed, straight separator bars need to be removed only for harvesting rice and harvesting rice and edible beans and similar viney crops.

③ Tough rice requires the use of spiked rasp bars over the concave area and the grate area. Set concave indicators at Number 20 when spiked rasp bars are used in the concave area.

**IMPORTANT:** Concave zero must be re-calibrated after installation of the spiked rasp bars or the rasp bars could make contact with the concave.

④ LW - Large Wire (1/4 Inch Diameter); SW - Small Wire (3/16 Inch Diameter); SL - Smooth Slotted.

⑤ Use of non-spiked rasp bars in all positions is recommended for most grass seed harvest conditions. Spiked bars may be helpful in extremely damp crops. Rotate fan cutoff rearward to the vertical position to reduce air volume.

⑥ Some soybeans may require rotor speeds up to 700 rpm or more.

⑦ The front portion of the chaffer sieve is, by design, to be set slightly more closed than the rest of the sieve

# COMBINE ADJUSTMENTS

## Evaluating Grain Loss and Combine Performance

It's harvest-time, and the return on a season's investment in labor, land, fertilizer, herbicide and pesticides all lies with the combine's ability to put every kernel in the grain tank. A tall order, and in reality impossible. But the Axial-Flow combines from Case IH will get you closer to perfection than any other combine.

Some simple steps should be taken as the combine is adjusted to match each crop and season, to check the cutting, threshing and separating performance of the combine, and isolate where adjustment may be necessary to get the best possible sample in the grain tank, with minimal loss.

A structured method of determining the source of loss is essential prior to making any adjustment to reduce loss. The illustration demonstrates how to make an accurate assessment of the source of harvest loss (*see figure 29.1*).

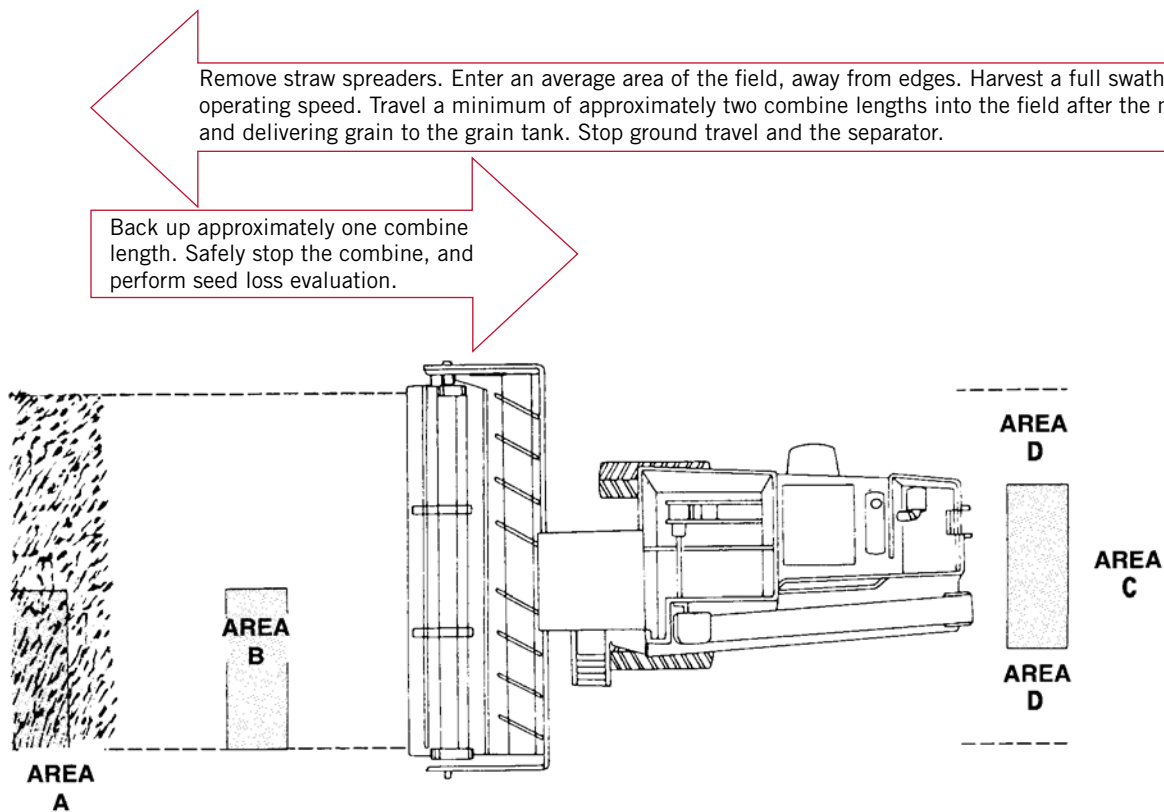


Figure 29.1

The number of seeds counted in each area indicated represents loss in various stages of harvest:

**Area A:** Pre-harvest loss in standing crop, prior to contact with the reel.

**Area B:** Pre-harvest + Header loss. (Header loss =  $B - A$ ) Loss occurring at the header due to shatter, dropped heads.

**Area C:** Pre-harvest + Header + Separator Loss. (Separator loss =  $C - B - A$ ) Combine loss will not be isolated to the rotor or cleaning system.

### Isolating Separator Loss

Combine loss can be isolated to rotor or cleaning system loss in either of two ways.

1. Note the current upper and lower sieve settings. Open upper and lower sieves fully, and repeat the test as illustrated. If observed separator loss is unchanged, loss is coming from the rotor. If loss decreases, observed loss from first test was from the cleaning system.
2. Perform the initial test with straw spreaders installed. Make sure the separator has stopped before backing away from cut crop. Observed loss in Area "C" is from the sieves (cleaning system). Observed loss in Area "D" is rotor loss that was spread across the width of the machine by the straw spreaders.

# COMBINE ADJUSTMENTS

## Determine the amount of loss at each source.

The next step is to count the grains lost on the ground in each “counting area.” Each “counting area” should be equal to about 10 square feet. The amount of grain lost depends on whether the collection is from windrowing or spreading. If collection is taken when windrowing the entire width of the cleaning system needs to be collected. If collection is taken when spreading, assuming even distribution, count the seeds within the area. To convert the amount of loss you find at any point to bushels, refer to the seed loss tables in your Operator’s Manual. Losses should be checked in several areas and averaged to eliminate the effects of any uneven feeding.

## Make the proper adjustments.

Once the loss counts have been performed as described, required areas of attention will be identified.

- To reduce header losses, make sure header is adjusted properly as explained in the Operator’s Manual
- Before making adjustments for separator losses, be sure there are no grain leaks due to missing bolts, open clean out doors, or other obvious causes
- For adjustments to the rotor and cleaning system, see your Operator’s Manual. For additional separator adjustments and recommendations, see pages 28.

## “Power-Stall” Problem Diagnosis (Quick Stop)

Problems with internal components are difficult to analyze. If you’re losing grain at the separator, you may want to use the “power-stall” diagnostic method.

- The “power-stall” uses an approved method of stopping the separator quickly while harvesting
- By preventing the separator from emptying, as would be the case in a normal shutdown, the procedure allows inspection of the inside of the combine as if it were in operation (see figure 30.1)
- There will be some major differences between the conditions observed and those that exist during operation. Even with these obvious limitations, the procedure can be an extremely useful diagnostic “tool.”
- See the Operator’s Manual under the heading “Quick Stop” Problem Diagnosis for a description of the procedure



Figure 30.1

## Increase Productivity With The Case IH AFX Rotor

With over 30 years of experience in rotary technology, Case IH stands tall with the most advanced design in rotary technology on the market today. Benefits of the AFX rotor include:

- Increases throughput by as much as 25% in tough crops or harvesting conditions
- Allows harvesting earlier in the day, and later at night
- Smoother, uninterrupted crop flow means more consistent delivery to the cleaning system
- Reduces peak horsepower demands in tough conditions, reducing load on the rotor drive belt
- Creates a powerful vacuum to move dust away from the feeder house and cab for better visibility
- Quieter operation
- Improved fuel efficiency

Straight separator bars (A) do not need to be removed to harvest other crops. These separation bars control material flow for effective separation. However, they are not recommended for rice.

- The position of the standard eight straight separator bars are for a corn combine equipped with the AFX rotor (see figure 30.2)
- The position of the four straight separator bars in a combine equipped for use in small grains with the AFX rotor (see figure 30.3)

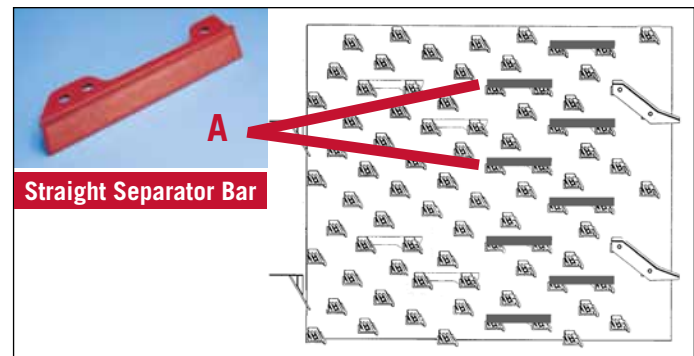


Figure 30.2

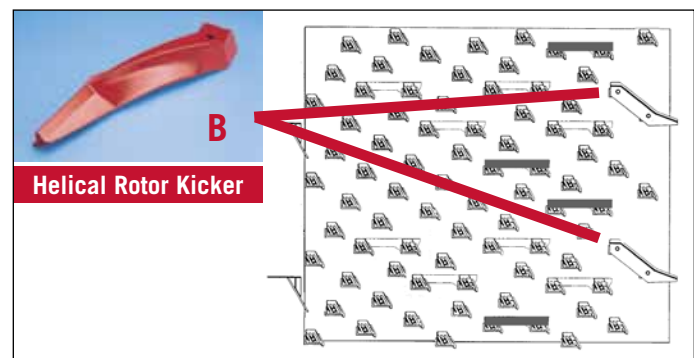


Figure 30.3

# COMBINE ADJUSTMENTS

## Increase Productivity With the Case IH AFX Rotor (cont.)

Helical kickers (B) are used to move material from the rotor cage into the discharge beater or chopper.

Some additional optional threshing and separating components are available to address specific crop conditions.

- Interrupter bars are used to increase threshing aggressiveness in hard-threshing small grains. The effect of Interrupter bars is to increase threshing area with additional concave bars (*see figure 31.1*).
- Spiked rasp bars increase agitation of the crop mat as it moves through the rotor cage (*see figure 31.2*). Spiked rasp bars will provide additional separation in heavy straw and crop residue conditions.
- Smooth rasp bars can be installed on AFX rotors (*see figure 31.3*). Smooth rasp bars are recommended for use in food grade crops such as food corn where minimal crop damage is a requirement. Dealers can find more information in Service Bulletin NHE SB 001 92.

## Straw Spreader Distribution Pattern

Distribution of residue from the straw spreaders can be adjusted by changing spreader speed and bat configuration.

Uneven right/left distribution may be due to the flow of material to the spreaders from the discharge beater or chopper. Often, residue flow is greater from the right side of the combine due to the normal flow of material in the rotor cage.

- Baffle inside the rear of the machine above the sieves is adjustable to four different positions (*see figure 31.4*)
- Adjustment evens flow to spreaders for more uniform distribution.



Figure 31.4

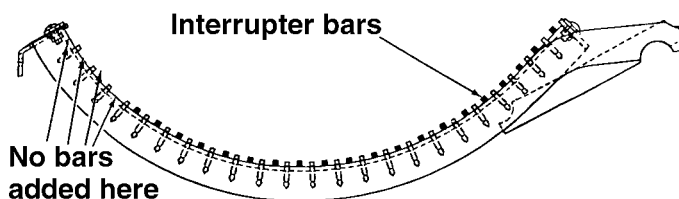


Figure 31.1



Figure 31.2



Figure 31.3

# COMBINE ADJUSTMENTS

## Combine Performance Troubleshooting Tables

The following separator adjustment tables are developed for specific crops. Identify the performance issue requiring attention in the left column. The numbers indicate the suggested sequence in which adjustment should be performed. Adjustments are described at the top of the corresponding column. Complete only those adjustments with corresponding numbers. A symbol or letter appearing below a number indicates the type of adjustment action to be performed, as described in the key with each table.

### Barley

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Gate Channels	Travel Speed
<b>CLEAN GRAIN SAMPLE</b>										
Damaged Grain	2 ▼	3 O				4 C	1 O			
Excessive Stems / Trash	4 ▼				2 ▲	3 C	1 C	5 CS		
<b>ROTOR LOSSES</b>	1		2 C				3 O			
Unthreshed Heads		2 ▲	1 C							
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲								
<b>GRAIN LOSS OVER CHAFFER</b>					2 +	1 O	3 O			
<b>GRAIN BLOWING OVER CHAFFER</b>					1 ▼	2 O				
<b>SHOE SIEVE OVERLOADING</b>					3 ▲	2 C	1 O			

#### KEY

O = Open  
C = Close  
A = Add  
R = Remove/Rearward  
F = Forward  
CS = Cover Slot  
▲ = Increase  
▼ = Decrease

\*Increase fan speed when sample caught at end of chaffer.  
Decrease fan speed when sample caught 2 to 3 feet from end of chaffer.

### Corn/Popcorn

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Gate Channels	Travel Speed
<b>CLEAN CORN SAMPLE</b>										
Damaged Corn in Sample	1 ▼	2 O	4 O		3 R					
Fines in Sample	1 ▼	2 O			3 ▲	4 C				
Small Bits of Cob in Sample	2 ▼	5 O			4 ▲	3 C	1 C			
<b>ROTOR LOSSES</b>	1 ▼	2 C	3 C	4 R	5 R					
Kernels Left on Cob	1 ▲	2 C								
Excessive Cob Breakage	1 ▼	2 O								
<b>EXCESSIVE POWER CONSUMPTION</b>	1 ▲	2 O	3 F						4 ▼	
<b>CORN LOSS OVER CHAFFER</b>	3 ▼				1 ▲	2 O			4 ▼	
<b>SHOE SIEVE OVERLOADING</b>	4 ▼				3 ▲	1 C	2 O		5 ▼	

#### KEY

O = Open  
C = Close  
A = Add  
R = Remove/Rearward  
F = Forward  
▲ = Increase  
▼ = Decrease

# COMBINE ADJUSTMENTS

## Edible Beans

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Grate Channels	Travel Speed
<b>CLEAN GRAIN SAMPLE</b>										
Damaged Grain	6	2 ▼	3 O	5 FP		4 C	1 O			
Excessive Stems / Trash		4 ▼			2 ▲	3 C	1 C	5 CS		
<b>ROTOR LOSSES</b>	1					2 O	3 OS*			
Unthreshed Heads		2 ▲	1 C							
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲	2 FP							
<b>GRAIN LOSS OVER CHAFFER</b>			3 O		1 ▲	2 O		4 CS		
<b>GRAIN BLOWING OVER CHAFFER</b>					1 ▼	2 O				
<b>SHOE SIEVE OVERLOADING</b>					3 ▲	2 C	1 O			

### KEY

O = Open  
 C = Close  
 A = Add  
 R = Remove/Rearward  
 F = Forward  
 FP = Fast Position  
 OS = Open Slot  
 CS = Cover Slot  
 ▲ = Increase  
 ▼ = Decrease

\* Use one or more bar stock grates.

## Maize/Milo

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Grate Channels	Travel Speed
<b>CLEAN GRAIN SAMPLE</b>										
Damaged Grain	1	2 ▼					3 O			
Heavy Stems		3 ▼				2 C	1 C			
Fines / Trash		2 ▼	3 O		1 ▲					
<b>ROTOR LOSSES</b>	1	4 s	2 C	5 R		3 O				
Unthreshed Heads		2 s	1 C							
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲							2	
<b>GRAIN LOSS OVER CHAFFER</b>		3 ▼			1 ▲	2 O			4	
<b>GRAIN BLOWING OVER CHAFFER</b>					1 ▼	2 O				
<b>SHOE SIEVE OVERLOADING</b>		4 ▼			3 ▲	1 C	2 O		5	

### KEY

O = Open  
 C = Close  
 A = Add  
 R = Remove/Rearward  
 F = Forward  
 ▲ = Increase  
 ▼ = Decrease

# COMBINE ADJUSTMENTS

## Rice

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Grate Channels	Travel Speed
<b>CLEAN GRAIN SAMPLE</b>										
Damaged Grain / Hulling	3	1 ▼	4 O		5 R		2 O			
<b>ROTOR LOSSES</b>	1	2 ▼	3 C							
<b>POOR MATERIAL FLOW</b>		1 ▲	2 C	3 M	4 R					
<b>UNTHRESHED HEADS</b>		1 ▲	2 O				3 C			
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲	2 O						3	
<b>GRAIN LOSS OVER CHAFFER</b>		3 ▼			1 ▲	2 O			4	
<b>GRAIN BLOWING OVER CHAFFER</b>					1 ▼	2 O			3	
<b>SHOE SIEVE OVERLOADING</b>		4 ▼			3 ▲	1 C	2 O			

### KEY

O = Open  
 C = Close  
 A = Add  
 R = Remove/Rearward  
 F = Forward  
 M = Middle  
 ▲ = Increase  
 ▼ = Decrease

## Rye Grass

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Grate Channels	Travel Speed
<b>CLEAN GRAIN SAMPLE</b>										
Heavy Stems		4 ▼	5 O		3 ▲	2 C	1 C			
Unthreshed Heads		1 ▲	2 C				3 C			
Excessive Stems / Trash		4 ▼	5 O		1 ▲	3 C	2 C			
<b>ROTOR LOSSES</b>	1	2 ▼	3 C						4 ▼	
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲	2 O						3	
<b>GRAIN LOSS OVER CHAFFER</b>					1 ▼	2 O			3	
<b>GRAIN BLOWING OVER CHAFFER</b>		3 ▼			1 ▲	2 O		4 ▲	5	
<b>SHOE SIEVE OVERLOADING</b>		4 ▼			3 ▲	1 C	2 O		5 ▲	6*

### KEY

O = Open  
 C = Close  
 A = Add  
 R = Remove/Rearward  
 F = Forward  
 ▲ = Increase  
 ▼ = Decrease

\*Change the concave configuration to more small wire concaves.  
 Note: Install shoe bottom pan.

# COMBINE ADJUSTMENTS

## Soybean

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Grate Channels	Travel Speed
<b>CLEAN BEAN SAMPLE</b>										
Damaged Grain	3	1 ▼	4 O		5 R		2 O			
Heavy Stems		4 ▼	5 O		3 ▲	2 C	1 C			
Unthreshed Pods		1 ▲	2 C				3 C			
Trash		4 ▼	5 O		1 ▲	3 C	2 C			
<b>ROTOR LOSSES</b>	1	2 ▼	3 C	4 R	5 R					
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲	2 O	3 F				4 R	3	
<b>GRAIN BLOWING OVER CHAFFER</b>					1 ▼	2 O				3
<b>BEAN LOSS OVER CHAFFER</b>		3 ▼		4 A	1 ▲	2 O				5
<b>SHOE SIEVE OVERLOADING</b>		4 ▼			3 ▲	1 C	2 O			5

### KEY

O = Open

C = Close

A = Add

R = Remove/Rearward

F = Forward

▲ = Increase

▼ = Decrease

## Sunflower

HARVEST CONDITION	ADJUSTMENT									
	Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Grate Channels	Travel Speed
<b>CLEAN GRAIN SAMPLE</b>										
Damaged Grain		4 ▼	1 O			3 C	2 O			
Excessive Stems / Trash		5 ▼	4 O		3 ▲	2 C	1 C			
<b>ROTOR LOSSES</b>	1	4 ▲	2 C				3 O			
Unthreshed Heads	1	2 ▲	1 C							
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲								
<b>GRAIN LOSS OVER CHAFFER</b>		5 ▼	4 O	3 *	1 ▲	2 O			5 **	
<b>GRAIN BLOWING OVER CHAFFER</b>					1 ▼	2 O				
<b>SHOE SIEVE OVERLOADING</b>				3 *		2 C	1 O	4 **††		

### KEY

O = Open

C = Close

A = Add

R = Remove/Rearward

F = Forward

▲ = Increase

▼ = Decrease

\*Change the concave configuration to more small wire concaves.

\*\*Cover the last two grates or use solid grate sections.

††Add extra helical kickers to enhance material flow.

Note: Install shoe bottom pan.

# COMBINE ADJUSTMENTS

## Wheat

HARVEST CONDITION		ADJUSTMENT									
		Inspect Concave for Plugging	Adjust Rotor Speed	Adjust Concave	Adjust Cage Vanes	Concave Wires	Adjust Fan Speed	Adjust Chaffer	Adjust Shoe	Grate Channels	Travel Speed
<b>CLEAN GRAIN SAMPLE</b>											
Damaged Grain	3	1 ▼	4 O				2 O				
Heavy Stems		4 ▼	5 O		3 ▲	2 C	1 C				
Unthreshed Heads		1 ▲	2 C				3 C				
Fines		4 ▼	5 O		1 ▲	3 C	2 C				
<b>ROTOR LOSSES</b>	1	2 ▼	3 C	4 R							
<b>EXCESSIVE POWER CONSUMPTION</b>		1 ▲	2 O							3	
<b>GRAIN LOSS OVER CHAFFER</b>					1 ▼	2 O				3	
<b>GRAIN BLOWING OVER CHAFFER</b>		3 ▼			1 ▲	2 O		4 A	5		
<b>SHOE SIEVE OVERLOADING</b>		4 ▼			3 ▲	1 C	2 O			5	

### KEY

O = Open

C = Close

A = Add

R = Remove/Rearward

F = Forward

▲ = Increase

▼ = Decrease

## Increasing the Efficiency of Axial-Flow Combines in Tough Harvest Conditions

These suggestions have helped many combine operators increase their efficiency in challenging conditions:

- If congestion becomes a problem in green, weedy crop conditions, reduce the rotor-to-concave clearance and/or increase the rotor rpm to help the green material move through the rotor cage
- When harvesting hard-to-thresh grains, help the combine complete the threshing operation by retarding two or more of the transport vanes to the slow position over the concaves, beginning with the first two vanes. For very severe hard-to-thresh conditions, such as a heat-stressed crop, interrupter bars can be installed in the concaves. In most cases, however, once the desired concave clearance is set, the best way to achieve ideal operation is to vary rotor speeds. Another plus for the Axial-Flow concept.

## Optimizing Straw Quality

The grain-on-grain and rubbing nature of the Axial-Flow combine threshing and separating system can inherently reduce straw length, making baling straw challenging in some conditions. Some specific settings, and harvesting conditions can be implemented to help produce longer length and quality straw. Special settings will tend to reduce threshing and separating performance, so a balance of straw value and grain loss must be determined when making adjustments.

### Reduce Aggressiveness of Rotor, and move material through the Rotor cage quickly:

- Rotor—remove the straight separator bars and replace them with rasp bars. Do not use spiked rasp bars unless necessary due to trashy conditions.
- Increase rotor speed and reduce concave clearance to move straw out of the rotor more quickly with less repeat contact with the rotor
- Adjust transport vanes over separator grates to the fast position
- Adjust transport vanes over the concave to the mid or fast position

### Configure Rotor cage for smoother material flow:

- Use small wire concaves, or at a minimum, in the first concave position
- Use slotted grates with bars on the outside in the ½ hole position
- If grain loss is not an issue, use solid separator grates in the second and third positions

### Other machine settings:

- Use a combine with discharge beater instead of straw chopper
- Retract the straw chopper concave and/or reduce chopper/beater speed
- Reduce rock trap beater
- Remove straw spreaders
- If straw is being driven into the stubble, leave spreader discs in place, but remove spreader bats or angles

### Harvesting conditions:

- Harvest when straw is tough during damp, tough conditions such as early morning or late evening
- Cut stubble lower for more stem than normal

# ADVANCED FARMING SYSTEMS (AFS)

## AFS

The power of information that you gather with the Pro 600 Display operating Case IH AFS Precision Farming systems can have a greater impact on your operation's profitability than many other factors that often get far greater attention. If not used correctly, a tool's full potential is seldom realized. With that thought in mind, some simple guidelines may help you make AFS operation simple and second nature, and ready to work for you (see figure 37.1).

Five basic components work together to capture harvest information as the combine moves through the field.

- The flow sensor measures grain volume
- The moisture sensor measures the grain moisture
- A ground speed sensor and programmed header width determine coverage area
- The yield monitor combines all crop and area data to populate the touch screen display
- Information is stored on a memory card that transfers data to desktop software

Add a DGPS receiver and record a data point every 1, 2, or 3 seconds as you travel through the field, to fully realize the power of information.

To record harvest data, four criteria must be met. Refer to the appropriate Operator's Manual for the software version running in your AFS system.

- A memory card must be inserted in the top slot of the display before turning the power ON
- The clean grain elevator must be running between 250 and 599 rpm
- Ground speed must be registered
- The header must be lowered below the header cut "stop height" position

When data is being recorded, the "Recording to Data Card" icon will be displayed in the Status/Warning area.

## Grain Moisture and Weight Sensors

The grain moisture sensor operates on the principle of an electrical current flowing from the sensor fin, through the grain, and to ground (see figure 37.2).

- The grain moisture sensor fin must be clean for proper function. A buildup of crop sap can reduce sensor accuracy.
- Remove any crop residue by scraping or using soap and water or solvent to clean the moisture fin and temperature sensors

The bypass auger is controlled by a proximity switch that cycles the auger as required, to assure the sensor fin is always in contact with grain.



Figure 37.1



Figure 37.2



Figure 37.3

# ADVANCED FARMING SYSTEMS (AFS)

## Grain Moisture and Weight Sensors (cont.)

- The bypass auger should be removed and cleaned. Ensure that the auger has not seized to the plastic block that supports the non-drive end (see figure 37.3).

**NOTE: Operators should monitor Instantaneous Moisture values while harvesting to confirm the sensor is functioning.** If moisture values do not show some fluctuation, a problem may exist with the moisture sensor that requires attention to assure accurate harvest data.

- If moisture readings are consistently very low, the auger may be operating constantly, preventing grain contact with the fin. *(Likely to occur only in lower yield crop where the bypass auger removes grain from the bypass as quickly as it enters.)*
- If moisture readings never change, and remain at a value likely to be representative of actual grain moisture, the auger may not be operating. *(The sensor is merely providing a moisture reading of a static sample that is in the bypass housing.)*
- The auger should operate for 30 seconds after the separator is disengaged, to clean grain from the bypass. Check by watching the end of the auger shaft during this 30-second period, to see if the shaft is turning.
- If not, check to assure the moisture sensor bypass auger fuse is not blown. If problems persist, contact your Case IH dealer for assistance.

Prior to harvesting, inspect the flow sensor impact plate (see figure 38.1). Clean the plate if necessary to assure crop flows smoothly across the surface. If any holes are worn through the plate it should be replaced.



Figure 38.1

## Component Calibration

To understand the need for system calibration, consider that AFS operates using electronic components that translate ground speed, header position, grain moisture and grain volume data into electrical signals.

- Many variables make “set-at-the-factory” accuracy impossible
- The operator manually enters the actual moisture values and weight from calibration samples
- Calibration values can be selectively applied to past or future harvest data, allowing the system to accurately reflect the moisture and weight of the grain being harvested

System inputs that require calibration:

- Header stop height (turns counting on and off)
- Distance (used to calculate ground speed)
- Grain Moisture
- Grain Weight

Operators must also remember that adjustment or replacement of any component that affects calibration requires re-calibration.

- Refer to the Operator’s Manual after re-calibration to use the correct Utility menu to apply calibration to harvest data collected after the component is replaced

In understanding the calibration process, the operator will realize the importance of maintaining an accurate record of load identification, calibration load weights and moisture test results.

- Make sure scale tickets are identified with the AFS farm, field, crop and task names to assure correct “actual” values are entered. **See the calibration record table included in the AFS Operator’s Manual (see table 38.1).**

CROP TYPE:				DATE:		
COMBINE:				OPERATOR		
FIELD	LOAD	FLOW BU./HR.	ESTIMATED WEIGHT	ACTUAL WEIGHT	% ERROR	INCLUDE? (Y/N)
1	Cal 1 Hi					
2	Cal 2 Hi					
3	Cal 1 Med					
4	Cal 2 Med					
5	Cal 1 Lo					
6	Cal 2 Lo					
7						

Table 38.1

# ADVANCED FARMING SYSTEMS (AFS)

## Important steps to assure accurate calibration.

- **DO NOT** attempt to make the first load harvested a calibration load. Frequent stops and starts as harvest begins and the machine is adjusted will result in inaccurate calibration.
- **DO NOT** harvest calibration loads until headlands are harvested
- Prior to harvesting the calibration load, make sure the grain tank and truck, cart or trailer used to transport the calibration load is completely empty.
- Attempt to harvest calibration loads of nearly the same size for best accuracy. Loads of 3,000-10,000 lbs. are suggested
- Empty the load into the truck or trailer
- **DO NOT** unload-on-the-go when harvesting calibration loads
- Use a range of speeds and throughputs that are expected in normal operation. The objective is to “teach” the flow sensor how different flow rates “feel” to the sensor.
- The highest output flow rate should be near that which the operator would prefer to operate the machine
- Medium and low flow rates are also suggested since variations in yield throughout the field, or conditions that result in reduced ground speed, can periodically lower throughput during normal harvest. A medium flow rate is 30% less than the high flow rate. A low flow rate is 30% less than the medium flow rate. Reduced flow rates are achieved by driving slower or taking a reduced swath.
- The operator should attempt to maintain a consistent flow rate when harvesting each of the loads. Use the “Instantaneous Flow-Dry” display to monitor throughput.
- Use at least one load from each flow rate
- Take 4-5 moisture tests in each load, from different areas of the grain tank. Average readings for actual values.
- Apply calibration values according to procedures for the calibration method being used

## Calibration Wizards

New Case IH 88 Series Combines can be equipped with the AFS Pro 600 display with software version 21 (see figure 39.1).

- Calibration Wizards greatly aid operators in performing successful calibrations with ease
- Once the operator is familiar with the basic navigation, the Wizards provide the necessary instructions to complete calibration
- Operator’s Manual used to acquaint users with basic Wizard navigation

Three different crop calibration methods can be selected (see figure 39.2).

- Fast Calibration
- Moisture and Weight Calibration Using the Wizard
- Advanced Calibration



Figure 39.1

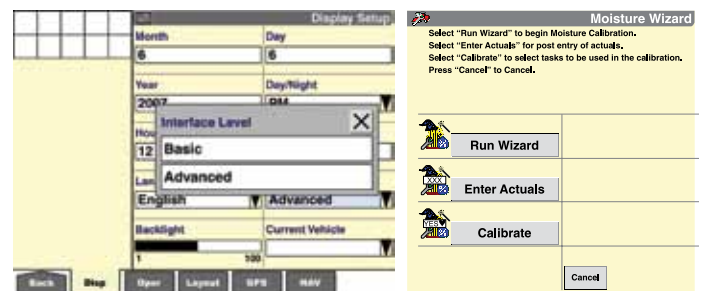


Figure 39.2

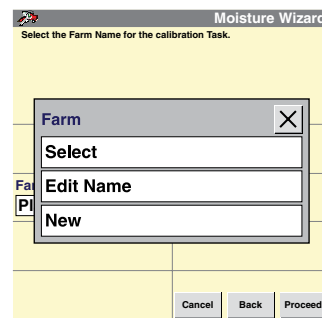


Figure 39.3



Figure 39.4

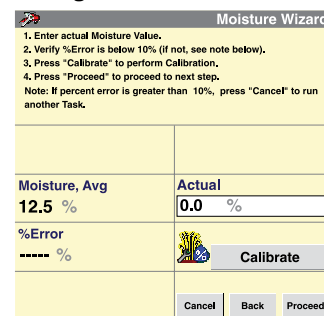


Figure 39.5

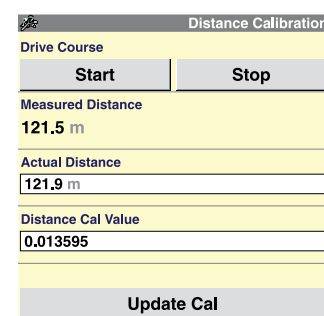


Figure 39.6

# ADVANCED FARMING SYSTEMS (AFS)

## Important steps to assure accurate calibration (cont.)

Wizards automatically progress step-to-step through the process.

- First display calibration load identification input screens in order (see figure 39.3) (Grower, Farm, Field, Crop, Task)
- Task is equivalent to “Load” in prior systems. New task is assigned by system when “Stop” is pressed after harvesting previous load.
- On-screen instructions for harvesting, handling and measuring the necessary calibration loads (see figure 39.4)
- Intuitive screens allow operators to input actual crop moisture and weight values (see figure 39.5)
- Clearly displays options for saving and applying new calibration data

Three separate factors critical to Yield Monitor accuracy are the Distance, Crop Moisture and Crop Weight values. Calibration of these factors must be performed in this order to assure correct monitor software function.

Distance calibration is critical for speed and area calculations

- Synchronizes the Yield Monitor with the actual distance the machine travels over a set course
- Wizard explains how to set up and drive the course, including Stop/Start commands
- Displays screens for the actual distance value input and updating the calibration (see figure 39.6)

## Moisture and Weight Calibration

- Fast Calibration uses averaged moisture value and scale weight (yield) for one load
- Wizard and Advanced Calibration use multiple loads to update moisture and weight (yield) values

**Moisture Calibration** fine-tunes the accuracy of the AFS moisture sensor by updating sensed values with moisture values of the same grain, measured in a known accurate moisture tester.

- Actual moisture values entered, percent error relative to sensed moisture calculated for each load (see figure 40.1)
- Operator can select up to 10 tasks (loads) to apply to calibration (see figure 40.2)
- Moisture calibration must be performed before Weight calibration

**Weight Calibration** fine-tunes the accuracy of the AFS flow sensor by updating sensed values with weight values of the same grain, measured in a known accurate scale.

- Harvest separate loads at high, medium and low target throughput flow rates (see figure 40.3)
- Press “Start” and follow on-screen instructions (see figure 40.4)
- Actual weight entered, percent error relative to sensed

weight calculated for each load (see figure 40.1\*)

- Operator can choose to apply Actual values immediately, or at a later time (see figure 40.5)
- Operator can select up to 10 tasks (loads) to apply to calibration (see figure 40.2\*)

An understanding of these basics is essential in achieving accurate AFS data records. The AFS Pro 600 Yield Monitor Operator's Manual provides detailed step-by-step instructions for performing AFS operations, calibrations and managing the display information and harvest data.

\*Yield Wizard screens closely resemble Moisture Wizard screen is figures 40.1 & 40.2

**Moisture Wizard**

1. Enter actual Moisture Value.
2. Verify %Error is below 10% (if not, see note below).
3. Press “Calibrate” to perform Calibration.
4. Press “Proceed” to proceed to next step.

Note: If percent error is greater than 10%, press “Cancel” to run another Task.

Moisture, Avg	Actual
12.5 %	13.0 %

%Error  
1.0 %

**Calibrate**

Cancel Back Proceed

Figure 40.1

**Moisture Wizard**

1. Select up to 10 Tasks to be used in calculating calibration values.
2. Press “Apply”, press “Proceed” to Finish.

Task Name / Percent Error	Calibration Task
%08/08/07-08:04:40 1.3 %	Yes
%08/07/07-07:29:14 1.1 %	Yes
%08/07/10-09:39:52 12.8 %	Yes
%08/06/02-10:46:08 1.6 %	Yes

Cancel Back Proceed

Figure 40.2

**Yield Wizard**

Select the target flow rate for the task to calibrate.  
Note: Calibrate a minimum of 3 Tasks, with 1 in each flow range.

Flow Type	Low Flow
Medium Flow	6
High Flow	0

Cancel Proceed

Figure 40.3

**Yield Wizard**

1. Make sure grain tank is empty.
2. Position the vehicle for the first swath.
3. Press “Start” to begin harvesting.
4. During harvest you may monitor the Run screens and upon finishing return to Moisture Wizard.
5. Press “Stop” when finished.
6. Empty the grain tank and obtain the Actual Weight for this Task.
7. Enter Actual Weight and Calibrate.

Recommendations:  
1. Harvest at least 3000 to 10000 lb.  
2. Harvest a consistent header width.  
3. Adjust Ground Speed to maintain a constant flow rate.

Help Tips Cancel Back Start

Figure 40.4

**Yield Wizard**

1. Select “Now” to enter Actual Values.
2. Select “Later” to enter Actual at a later time.

Enter Actual Now  
Now

Enter Actual Later  
Later

Cancel Back

Figure 40.5

## Combine Storage

When harvest is done, and you've worked long hours for weeks to bring in the harvest, it is real easy to want to kick back; or if the conditions are right, get out and do some fall tillage before the snow flies. You deserve some time off, or a chance to get a jump on next year. But, just make sure to give your combine some end-of-season and pre-storage attention before the shed doors close, and it's forgotten until next harvest season. Off-season neglect can cost big in terms of corrosive damage, rust and deterioration, all avoidable with a little thought to prevention and maintenance.

The combine should be stored in a dry, protected location. Outside storage, subject to weather and elements will shorten the life of the machine.

The following procedure should be used to prepare the combine for storage periods of up to 6 months.

1. The combine should be thoroughly cleaned before storage to remove chaff and debris that can collect moisture or attract rodents during storage.
  - A high volume and velocity air blower like a leaf blower or industrial compressor works best when debris is dry
  - Washing the unit will provide the most complete cleaning, removing debris that may be stuck to grease or oily accumulations that cannot be removed with just compressed air or mechanical cleaning; as well as removing the grease and oil as well
  - If the unit is washed, care must be exercised to assure **COMPLETE** removal of chaff and debris, especially from inconspicuous areas where it will result in accelerated rust and corrosion over an extended period of time
  - Tightly cover the engine starter and alternator with plastic, before washing the combine
  - Avoid directing the blast from a high-pressure washer or steam cleaner against non-greaseable sealed bearings, where moisture that infiltrates the seals will remain and lead to corrosive damage
  - In areas that freeze make sure to remove any water that may be trapped in the transition cone, auger bed or grain tank. All of these areas have removable covers, doors or plugs that allow water to drain.
2. After thoroughly cleaning the combine and allowing it to dry, lubricate the machine as specified in the "Lubrication/Filters/Fluids section of the Operator's Manual."
  - Remove the coverings from the starter and alternator
3. Clean the inside of the machine including the concave and separator grate, upper and lower sieves, cleaning fan, clean grain and tailings auger troughs.
  - Open the clean grain and tailings elevator doors
  - Open the auger bed front door and clean the auger bed
4. Clean the inside of the cab and instrument panel. Clean the cab air and recirculation filters.
5. Rodents can damage a combine while in storage. Rodents will eat plastic, insulation or rubber materials, especially when coated with grain dust.
  - Clean the areas where rodents may nest
  - Leave access panels and doors open to remove convenient nesting pockets. In some conditions, leaving mothballs will help discourage rats and mice.
6. Check coolant anti-freeze protection. Use only low silicate, heavy-duty coolant in the cooling system.
  - Add cooling system conditioner and change the coolant filter conditioner
7. Run the engine long enough to completely warm the oil in the crankcase before draining the oil.
  - Remove and replace the oil filter as instructed
  - Fill the crankcase with fresh oil and run the engine for two to five minutes
8. Open the drain on the water separator fuel filter and drain water and sediment.
  - Fill the fuel tank with a premium grade diesel fuel. If this fuel grade has not been used regularly, drain the fuel tank and fill with premium diesel fuel. **DO NOT store the combine with biodiesel fuel in the tank or fuel system.**
  - Run the engine for five minutes to circulate the fuel through the fuel injection system
  - Close the fuel shutoff valve between the water separator filter and fuel tank to prevent fuel draining from fuel injection system into the fuel tank

# STORAGE

## Combine Storage (cont.)

9. Clean the air cleaner filter and body.
10. Cover the engine breather pipe and exhaust pipe.
11. Batteries can remain in the combine, but must be fully charged to prevent freezing in cold temperatures.
  - Remove the battery ground cables to prevent slow discharge
12. Store the combine out of direct sunlight. Clean tires before storage, and support the combine on blocking if possible to remove load from the tires.
  - If the combine is not blocked, check tires frequently and maintain inflation during storage
  - Lower the head to remove weight from tires
14. Lubricate chains with light oil or chain lubricant.
15. Lower the head to remove load from the hydraulic system.
  - Retract all hydraulic cylinders if possible. Coat exposed cylinder rods with grease to prevent rust and corrosion. (Clean grease from rods when removing the combine from storage.)
16. Remove tension from belts.
17. On combines equipped with Moisture Sensor, remove the bypass auger and remove grain from the housing. Make sure the auger turns freely in the plastic bearing block. Use the retaining pins to reach through the bearing block to align and hold the auger in place while re-installing the block.

## Removing the Combine from Storage

Consult the Operator's Manual. In addition to confirming fluid levels and closing cleanout doors, several other inspections are suggested when preparing the combine for use.



NOTES

[illegible]



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**Safety Never Hurts!™** Always read the Operator's Manual before operating any equipment. Inspect equipment before using it, and be sure it is operating properly. Follow the product safety signs, and use any safety features provided.

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## 7120/8120/9120 SERIES COMBINE PRODUCTIVITY GUIDE



### FEATURING

- Safety
- Controls and Operations
- Service Inspections
- Maintenance
- Combine Adjustments
- Advanced Farming Systems (AFS)
- Storage

